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APPLICANTS:	Kekuda et al.		
SERIAL NUMBER:	09/981,566	EXAMINER:	Not Yet Assigned
FILING DATE:	October 16, 2001	ART UNIT:	1653
FOR:	NOVEL GPCR-LIKE PROTEINS AND NUCLEIC ACIDS ENCODING SAME		

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Assistant Commissioner for Patents
Washington, D.C. 20231

STATEMENT IN SUPPORT OF COMPUTER READABLE FORM SUBMISSION UNDER 37 C.F.R. § 1.821(f)

I hereby state that the content of the paper and computer readable forms of the Sequence Listing, submitted in the above-identified application in accordance with 37 C.F.R. § 1.821(c) and 1.821(e), respectively, are the same. No new matter is added.

Respectfully submitted,

January 30, 2002

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Fax : (617) 542 2241

SEQUENCE LISTING

<111> Kekuda et al.

<120> Novel GPCR-like Proteins and Nucleic Acids Encoding Same

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Tyr Leu Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile
35 40 45

Ala Asp Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe
50 55 60

Ser Leu Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu
65 70 75 80

Ser Asp Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met
85 90 95

Val Gln Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile
100 105 110

Leu Thr Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu
115 120 125

Arg Tyr Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly
130 135 140

Ala Ala Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser
145 150 155 160

Arg Ala His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe

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                165                 170                 175

Cys Asp Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu
            180                 185                 190

Leu Glu Phe Trp Asp Phe Leu Met Ala Leu Thr Phe Val Leu Ser Ser
        195                 200                 205

Phe Leu Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu
    210                 215                 220

Arg Ile Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly
225                 230                 235                 240

Ser His Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu
                245                 250                 255

Tyr Val Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val
            260                 265                 270

Ala Leu Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu
        275                 280                 285

Thr Phe Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln
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Arg Leu Lys Gly Leu Cys Lys Ala Gln
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<211> 311

<212> PRT
<213> Homo sapiens

<400> 4

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             20                  25                  30

Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile Ala Asp
         35                  40                  45

Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe Ser Leu
     50                  55                  60

Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu Ser Asp
 65                  70                  75                  80

Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met Val Gln
                 85                  90                  95

Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile Leu Thr
            100                 105                 110

Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg Tyr
        115                 120                 125

Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly Ala Ala
    130                 135                 140

Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser Arg Ala
145                 150                 155                 160

His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe Cys Asp
                165                 170                 175

Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu Leu Glu
            180                 185                 190

Phe Trp Asp Phe Leu Met Ala Met Thr Phe Val Leu Ser Ser Phe Leu
        195                 200                 205

Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu Arg Ile
    210                 215                 220

Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly Ser His
225                 230                 235                 240

Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu Tyr Val
                245                 250                 255

Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val Ala Leu
            260                 265                 270

Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu Thr Phe
        275                 280                 285
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Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln Arg Leu
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Lys Gly Leu Cys Lys Ala Gln
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<212> DNA
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<213> Homo sapiens

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Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile Ala Asp
         35                  40                  45

Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe Ser Leu
     50                  55                  60

Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu Ser Asp
 65                  70                  75                  80

Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met Val Gln
                 85                  90                  95
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Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile Leu Thr
            100                 105                 110

Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg Tyr
        115                 120                 125

Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly Ala Ala
    130                 135                 140

Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser Arg Ala
145                 150                 155                 160

His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe Cys Asp
                165                 170                 175

Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu Leu Glu
            180                 185                 190

Phe Trp Asp Phe Leu Met Ala Leu Thr Phe Val Leu Ser Ser Phe Leu
        195                 200                 205

Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu Arg Ile
    210                 215                 220

Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly Ser His
225                 230                 235                 240

Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu Tyr Val
                245                 250                 255

Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val Ala Leu
            260                 265                 270

Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu Thr Phe
        275                 280                 285

Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln Arg Leu
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Lys Gly Leu Cys Lys Ala Gln
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Gly Glu Leu Gln Ala Leu Leu Tyr Gly Pro Phe Leu Met Leu Tyr Leu
35 40 45

Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile Ala Asp
50 55 60

Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe Ser Leu
65 70 75 80

Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu Ser Asp
85 90 95

Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met Val Gln
100 105 110

Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile Leu Thr
115 120 125

Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg Tyr
130 135 140

Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly Ala Ala
145 150 155 160

Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser Arg Ala
165 170 175

His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe Cys Asp
180 185 190

Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu Leu Glu
195 200 205

Phe Trp Asp Phe Leu Met Ala Leu Thr Phe Val Leu Ser Ser Phe Leu

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    210                 215                 220

Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu Arg Ile
225                 230                 235                 240

Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly Ser His
                245                 250                 255

Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu Tyr Val
            260                 265                 270

Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val Ala Leu
        275                 280                 285

Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu Thr Phe
    290                 295                 300

Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln Arg Leu
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Lys Gly Leu Cys Lys Ala Gln
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Tyr Leu Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile
        35                  40                  45

Ala Asp Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe
    50                  55                  60

Ser Leu Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu
65                  70                  75                  80

Ser Asp Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met
                85                  90                  95

Val Gln Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile
            100                 105                 110

Leu Thr Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu
        115                 120                 125

Arg Tyr Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly
    130                 135                 140

Ala Ala Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser
145                 150                 155                 160

Arg Ala His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe
                165                 170                 175

Cys Asp Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu
            180                 185                 190

Leu Glu Phe Trp Asp Phe Leu Met Val Leu Thr Phe Val Leu Ser Ser
        195                 200                 205

Phe Leu Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu
    210                 215                 220

Arg Ile Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly
225                 230                 235                 240

Ser His Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu
                245                 250                 255

Tyr Val Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val
            260                 265                 270

Ala Leu Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu
        275                 280                 285

Thr Phe Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln
    290                 295                 300

Arg Leu Lys Gly Leu Cys Lys Ala Gln
305                 310
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Leu Tyr Gly Pro Phe Leu Met Leu Tyr Leu Leu Ala Phe Met Gly Asn
35 40 45

Thr Ile Ile Ile Val Met Val Ile Ala Asp Thr His Leu His Thr Pro
50 55 60

Met Tyr Phe Phe Leu Gly Asn Phe Ser Leu Leu Glu Ile Leu Val Thr
65 70 75 80

Met Thr Ala Val Pro Arg Met Leu Ser Asp Leu Leu Val Pro His Lys
85 90 95

Val Ile Thr Phe Thr Gly Cys Met Val Gln Phe Tyr Phe His Phe Ser
100 105 110

Leu Gly Ser Thr Ser Phe Leu Ile Leu Thr Asp Met Ala Leu Asp Arg
115 120 125

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Phe Val Ala Ile Cys His Pro Leu Arg Tyr Gly Thr Leu Met Ser Arg
    130                 135                 140

Ala Met Cys Val Gln Leu Ala Gly Ala Ala Trp Ala Ala Pro Phe Leu
145                 150                 155                 160

Ala Met Val Pro Thr Val Leu Ser Arg Ala His Leu Asp Tyr Cys His
                165                 170                 175

Gly Asp Val Ile Asn His Phe Phe Cys Asp Asn Glu Pro Leu Leu Gln
            180                 185                 190

Leu Ser Cys Ser Asp Thr Arg Leu Leu Glu Phe Trp Asp Phe Leu Met
        195                 200                 205

Val Leu Thr Phe Val Leu Ser Ser Phe Leu Val Thr Leu Ile Ser Tyr
    210                 215                 220

Gly Tyr Ile Val Thr Thr Val Leu Arg Ile Pro Ser Ala Ser Ser Cys
225                 230                 235                 240

Gln Lys Ala Phe Ser Thr Cys Gly Ser His Leu Thr Leu Val Phe Ile
                245                 250                 255

Gly Tyr Ser Ser Thr Ile Phe Leu Tyr Val Arg Pro Gly Lys Ala His
            260                 265                 270

Ser Val Gln Val Arg Lys Val Val Ala Leu Val Thr Ser Val Leu Thr
        275                 280                 285

Pro Phe Leu Asn Pro Phe Ile Leu Thr Phe Cys Asn Gln Thr Val Lys
    290                 295                 300

Thr Val Leu Gln Gly Gln Met
305                 310
```

<210> 13
<211> 314
<212> PRT
<213> Mus musculus

<400> 13

```
Met Met Asp Asn Leu Ser Ser Ala Thr Glu Phe Cys Leu Leu Gly Phe
  1               5                  10                  15

Pro Gly Ser Gln Glu Leu His Tyr Ile Leu Phe Ala Ile Phe Phe Phe
             20                  25                  30

Phe Tyr Ser Val Thr Leu Leu Gly Asn Met Val Ile Ile Ile Ile Val
         35                  40                  45

Cys Val Asp Lys Arg Leu Gln Ser Pro Met Tyr Phe Phe Leu Gly Asn
     50                  55                  60

Leu Ser Leu Leu Glu Ile Leu Val Thr Thr Thr Ile Val Pro Leu Met
 65                  70                  75                  80
```

```
Leu Trp Gly Leu Leu Leu Pro Gly Lys Gln Thr Ile Ser Leu Asn Gly
                 85                  90                  95

Cys Ile Ala Gln Leu Phe Leu Tyr Leu Ala Leu Gly Thr Thr Glu Phe
            100                 105                 110

Ala Val Leu Gly Ala Met Ala Val Asp Arg Tyr Val Ala Val Cys Asn
        115                 120                 125

Pro Leu Arg Tyr Ser Val Ile Met Asn Ser Arg Thr Cys Ile Trp Val
    130                 135                 140

Val Met Val Ser Trp Met Phe Gly Phe Leu Ser Glu Ile Trp Pro Val
145                 150                 155                 160

Tyr Ala Thr Phe Gln Phe Thr Phe Cys Lys Ser Asn Leu Leu Asp His
                165                 170                 175

Phe Tyr Cys Asp Arg Gly Gln Leu Leu Lys Leu Ser Cys Asn Glu Thr
            180                 185                 190

Phe Leu Thr Glu Phe Ile Leu Phe Ile Met Ala Ile Phe Ile Ile Val
        195                 200                 205

Gly Ser Leu Ile Pro Thr Ile Val Ser Tyr Thr Tyr Ile Ile Ser Thr
    210                 215                 220

Ile Leu Lys Ile Pro Ser Ala Ser Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ala Ser His Phe Thr Phe Val Val Ile Gly Tyr Gly Thr Cys Leu
                245                 250                 255

Phe Leu Tyr Val Lys Pro Lys Gln Thr Gln Ala Ala Glu Tyr Asn Arg
            260                 265                 270

Val Ala Ser Leu Leu Val Ser Val Val Thr Pro Phe Leu Asn Pro Phe
        275                 280                 285

Ile Phe Thr Leu Arg Asn Asp Lys Val Lys Glu Ala Leu Arg Asp Gly
    290                 295                 300

Val Lys Arg Cys Cys Leu Leu Leu Arg Asp
305                 310


<210> 14
<211> 313
<212> PRT
<213> Mus musculus

<400> 14
Met Ala Asn Ser Thr Thr Val Thr Glu Phe Ile Leu Leu Gly Leu Ser
  1               5                  10                  15

Asp Ala Cys Glu Leu Gln Val Leu Ile Phe Leu Gly Phe Leu Leu Thr
```

```
            20                  25                  30

Tyr Phe Leu Ile Leu Leu Gly Asn Phe Leu Ile Ile Phe Ile Thr Leu
         35                  40                  45

Val Asp Arg Arg Leu Tyr Thr Pro Met Tyr Tyr Phe Leu Arg Asn Phe
     50                  55                  60

Ala Met Leu Glu Ile Trp Phe Thr Ser Val Ile Phe Pro Lys Met Leu
 65                  70                  75                  80

Thr Asn Ile Ile Thr Gly His Lys Thr Ile Ser Leu Leu Gly Cys Phe
                 85                  90                  95

Leu Gln Ala Phe Leu Tyr Phe Phe Leu Gly Thr Thr Glu Phe Phe Leu
            100                 105                 110

Leu Ala Val Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asn Pro Leu
        115                 120                 125

Arg Tyr Ala Thr Ile Met Ser Lys Arg Val Cys Val Gln Leu Val Phe
    130                 135                 140

Cys Ser Trp Met Ser Gly Leu Leu Leu Ile Ile Val Pro Ser Ser Ile
145                 150                 155                 160

Val Phe Gln Gln Pro Phe Cys Gly Pro Asn Ile Ile Asn His Phe Phe
                165                 170                 175

Cys Asp Asn Phe Pro Leu Met Glu Leu Ile Cys Ala Asp Thr Ser Leu
            180                 185                 190

Val Glu Phe Leu Gly Phe Val Ile Ala Asn Phe Ser Leu Leu Gly Thr
        195                 200                 205

Leu Ala Val Thr Ala Thr Cys Tyr Gly His Ile Leu Tyr Thr Ile Leu
    210                 215                 220

His Ile Pro Ser Ala Lys Glu Arg Lys Lys Ala Phe Ser Thr Cys Ser
225                 230                 235                 240

Ser His Ile Ile Val Val Ser Leu Phe Tyr Gly Ser Cys Ile Phe Met
                245                 250                 255

Tyr Val Arg Ser Gly Lys Asn Gly Gln Gly Glu Asp His Asn Lys Val
            260                 265                 270

Val Ala Leu Leu Asn Thr Val Val Thr Pro Thr Leu Asn Pro Phe Ile
        275                 280                 285

Tyr Thr Leu Arg Asn Lys Gln Val Lys Gln Val Phe Arg Glu His Val
    290                 295                 300

Ser Lys Phe Gln Lys Phe Ser Gln Thr
305                 310
```

<210> 15
<211> 317
<212> PRT
<213> Mus musculus

<400> 15
Met Glu Gly Lys Asn Gln Thr Ala Pro Ser Glu Phe Ile Ile Leu Gly
1 5 10 15

Phe Asp His Leu Asn Glu Leu Gln Tyr Leu Leu Phe Thr Ile Phe Phe
20 25 30

Leu Thr Tyr Ile Cys Thr Leu Gly Gly Asn Val Phe Ile Ile Val Val
35 40 45

Thr Ile Ala Asp Ser His Leu His Thr Pro Met Tyr Tyr Phe Leu Gly
50 55 60

Asn Leu Ala Leu Ile Asp Ile Cys Tyr Thr Thr Thr Asn Val Pro Gln
65 70 75 80

Met Met Val His Leu Leu Ser Glu Lys Lys Ile Ile Ser Tyr Gly Gly
85 90 95

Cys Val Thr Gln Leu Phe Ala Phe Ile Phe Phe Val Gly Ser Glu Cys
100 105 110

Leu Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ile Ala Ile Cys Lys
115 120 125

Pro Leu Arg Tyr Ser Phe Ile Met Asn Lys Ala Leu Cys Ser Trp Leu
130 135 140

Ala Ala Ser Cys Trp Thr Cys Gly Phe Leu Asn Ser Val Leu His Thr
145 150 155 160

Val Leu Thr Phe His Leu Pro Phe Cys Gly Asn Asn Gln Ile Asn Tyr
165 170 175

Phe Phe Cys Asp Ile Pro Pro Leu Leu Ile Leu Ser Cys Gly Asp Thr
180 185 190

Ser Leu Asn Glu Leu Ala Leu Leu Ser Ile Gly Ile Leu Ile Gly Trp
195 200 205

Thr Pro Phe Leu Cys Ile Ile Leu Ser Tyr Leu Tyr Ile Ile Ser Thr
210 215 220

Ile Leu Arg Ile Arg Ser Ser Glu Gly Arg Gln Lys Ala Phe Ser Thr
225 230 235 240

Cys Ala Ser His Leu Leu Ile Val Ile Leu Tyr Tyr Gly Ser Ala Ile
245 250 255

Phe Thr Tyr Val Arg Pro Ile Ser Ser Tyr Ser Leu Glu Lys Asp Arg
260 265 270

```
Leu Ile Ser Val Leu Tyr Ser Val Phe Thr Pro Met Leu Asn Pro Ile
        275                 280                 285

Ile Tyr Ala Leu Arg Asn Lys Asp Ile Lys Glu Ala Val Lys Ala Ile
    290                 295                 300

Gly Arg Lys Trp Gln Pro Pro Val Phe Ser Ser Asp Met
305                 310                 315
```

<210> 16
<211> 314
<212> PRT
<213> Mus musculus

<400> 16

```
Met Leu Asp Met Asn Ile Thr Leu Val Ser Glu Phe Ile Leu Val Gly
  1               5                  10                  15

Phe Pro Thr Ala Pro Trp Leu Gln Ile Leu Leu Phe Phe Ile Phe Leu
             20                  25                  30

Val Val Tyr Met Leu Ile Ile Ala Glu Asn Leu Val Ile Ile Phe Thr
         35                  40                  45

Val Trp Ser Thr Gly Ser Leu His Lys Pro Met Tyr Tyr Phe Leu Ser
     50                  55                  60

Ser Met Ser Phe Leu Glu Ile Trp Tyr Val Ser Val Thr Val Pro Lys
 65                  70                  75                  80

Met Leu Asp Gly Phe Leu Leu Gln Arg Arg His Ile Ser Phe Thr Gly
                 85                  90                  95

Cys Met Thr Gln Leu Tyr Phe Phe Ile Ser Leu Ala Cys Thr Glu Cys
            100                 105                 110

Val Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His
        115                 120                 125

Pro Leu Arg Tyr Pro Val Ile Met Thr Thr Val Tyr Cys Met Gln Leu
    130                 135                 140

Met Ala Leu Ser Tyr Phe Ser Gly Phe Met Val Ser Val Val Lys Val
145                 150                 155                 160

Tyr Phe Ile Ser His Val Ala Phe Cys Gly Ser Asn Val Met Asn His
                165                 170                 175

Phe Phe Cys Asp Ile Ser Pro Ile Leu Lys Leu Ala Cys Lys Asp Met
            180                 185                 190

Ser Thr Ala Glu Leu Val Asp Phe Ala Leu Ala Ile Val Ile Leu Val
        195                 200                 205

Phe Pro Leu Ile Thr Thr Val Leu Ser Tyr Val Tyr Ile Val Ser Thr
    210                 215                 220
```

```
Ile Leu Arg Ile Pro Ser Thr Gln Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ala Ser His Leu Thr Val Val Ile Ile Tyr Tyr Thr Ala Met Ile
                245                 250                 255

Phe Met Tyr Val Arg Pro Arg Ala Ile Ala Ser Phe Asn Ser Asn Lys
            260                 265                 270

Leu Ile Ser Ala Val Tyr Ala Val Leu Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Cys Leu Arg Asn Arg Glu Val Lys Asp Ala Ile Lys Lys Thr
    290                 295                 300

Leu Gly Gly Gly Gln Cys Phe Leu Leu Cys
305                 310
```

<210> 17
<211> 280
<212> PRT
<213> Homo sapiens

<400> 17

```
Met Leu Leu Gly Asn Leu Ala Ile Ile Ser Phe Ile Cys Leu Asp Ser
  1               5                  10                  15

Arg Leu His Ser Pro Met Tyr Phe Phe Leu Cys Asn Phe Ser Leu Met
            20                  25                  30

Glu Met Val Val Thr Ser Thr Val Val His Arg Met Leu Ala Asp Leu
        35                  40                  45

Leu Ser Thr His Lys Thr Met Ser Leu Ala Lys Cys Leu Thr Gln Ser
    50                  55                  60

Phe Phe Tyr Phe Ser Leu Gly Ser Ala Asn Phe Leu Ile Leu Met Val
65                  70                  75                  80

Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro
                85                  90                  95

Thr Ile Thr Asn Gly Pro Val Cys Val Lys Leu Val Val Ala Cys Trp
            100                 105                 110

Val Val Gly Phe Leu Ser Ile Val Ser Pro Thr Leu Gln Lys Thr Arg
        115                 120                 125

Leu Trp Phe Cys Gly Pro Asn Ile Ile Gly His Tyr Phe Cys Asp Ser
    130                 135                 140

Ala Pro Leu Leu Lys Leu Ala Cys Ser Asp Thr Arg His Ile Glu Arg
145                 150                 155                 160

Met Asp Leu Phe Leu Ser Leu Leu Phe Val Leu Thr Thr Met Leu Leu
```

```
                165                 170                 175

Ile Ile Leu Ser Tyr Ile Leu Ile Val Ala Ala Val Leu His Ile Pro
            180                 185                 190

Ser Ser Ser Gly Cys Gln Lys Ala Phe Ser Thr Cys Ala Ser His Leu
        195                 200                 205

Thr Val Val Val Leu Gly Tyr Gly Ser Ala Ile Phe Ile Tyr Val Arg
    210                 215                 220

Pro Gly Lys Gly His Ser Thr Tyr Leu Asn Lys Ala Val Ala Met Val
225                 230                 235                 240

Thr Ala Met Val Thr Pro Phe Leu Asn Pro Phe Ile Phe Thr Phe Arg
                245                 250                 255

Asn Glu Lys Val Lys Glu Val Ile Glu Asp Val Thr Lys Arg Ile Phe
            260                 265                 270

Leu Gly Asp Pro Ala Ala Cys Arg
        275                 280
```

<210> 18
<211> 254
<212> PRT
<213> Homo sapiens

<400> 18

```
Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
  1               5                  10                  15

Thr Pro Thr Asn Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu
             20                  25                  30

Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
         35                  40                  45

Asp Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe
     50                  55                  60

Val Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile
 65                  70                  75                  80

Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg
                 85                  90                  95

Thr Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala
            100                 105                 110

Leu Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val
        115                 120                 125

Glu Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser
    130                 135                 140
```

```
Val Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu
145                 150                 155                 160

Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu
                165                 170                 175

Arg Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser
            180                 185                 190

Glu Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val
        195                 200                 205

Leu Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys
    210                 215                 220

Leu Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu
225                 230                 235                 240

Trp Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
                245                 250


<210> 19
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:consensus
      sequence

<220>
<221> VARIANT
<222> (1)
<223> Wherein Xaa is G or S or T or A or L or I or V or
      M or F or Y or W or C

<220>
<221> VARIANT
<222> (2)
<223> Wherein Xaa is G or S or T or A or N or C or P or
      D or E

<220>
<221> VARIANT
<222> (3)
<223> Wherein Xaa is not E or D or P or K or R or H

<220>
<221> VARIANT
<222> (4)
<223> Wherein Xaa is any amino acid as defined in the
      specification

<220>
<221> VARIANT
<222> (5)
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<223> Wherein Xaa is any amino acid as defined in the specification

<220>
<221> VARIANT
<222> (6)
<223> Wherein Xaa is L or I or V or M or N or Q or G or A

<220>
<221> VARIANT
<222> (7)
<223> Wherein Xaa is any amino acid as defined in the specification

<220>
<221> VARIANT
<222> (8)
<223> Wherein Xaa is any amino acid as defined in the specification

<220>
<221> VARIANT
<222> (9)
<223> Wherein Xaa is L or I or V or M or F or T

<400> 19
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Xaa Xaa Xaa
1 5 10 15

Xaa

<210> 20
<211> 990
<212> DNA
<213> Homo sapiens

<400> 20
gactaaatga tggacaacca ctctagtgcc actgaattcc accttctagg cttccctggg 60
tcccaaggac tacaccacat tctttttgct atattctttt tcttctattt agtgacatta 120
atgggaaaca cggtcatcat tgtgattgtc tgtgtggata aacgtctgca gtcccccatg 180
tatttcttcc tcagccacct ctctaccctg gagatcctgg tcacaaccat aattgtcccc 240
atgatgcttt ggggattgct cttcctggga tgcagacagt atctttctct acatgtatcg 300
ctcaactttt cctgtgggac catggagttt gcattacttg gagtgatggc tgtggaccgt 360
tatgtggctg tgtgtaaccc tttgaggtac aacatcatta tgaacagcag tacctgtatt 420
tgggtggtaa tagtgtcatg ggtgtttgga tttctttctg aaatctggcc catctatgcc 480
acatttcagt ttaccttccg caaatcaaat tcattagacc atttttactg tgaccgaggg 540
caattgctca aactgtcctg cgataacact cttctcacag agtttatcct tttcttaatg 600
gctgttttta ttctcattgg ttctttgatc cctacgattg tctcctacac ctacattatc 660
tccaccatcc tcaagatccc gtcagcctct ggccggagga aagccttctc cacttttgcc 720
tcccacttca cctgtgttgt gattggctat ggcagctgct tgtttctcta cgtgaaaccc 780
aagcaaacac agggagttga gtacaataag atagtttcct tgttggtttc tgtgttaacc 840
ccccttcctg aatcctttca tctttactct tcggatgaca aagtcaaaga ggccctccga 900
gatgggatga aacgctgctg tcaactcctg aaagattagc tgttctgtaa gtcagtttta 960
ggtggtccaa gcctcagggt taattattaa 990

<210> 21
<211> 310
<212> PRT
<213> Homo sapiens

<400> 21
Met Met Asp Asn His Ser Ser Ala Thr Glu Phe His Leu Leu Gly Phe
1 5 10 15

Pro Gly Ser Gln Gly Leu His His Ile Leu Phe Ala Ile Phe Phe Phe
20 25 30

Phe Tyr Leu Val Thr Leu Met Gly Asn Thr Val Ile Ile Val Ile Val
35 40 45

Cys Val Asp Lys Arg Leu Gln Ser Pro Met Tyr Phe Phe Leu Ser His
50 55 60

Leu Ser Thr Leu Glu Ile Leu Val Thr Thr Ile Ile Val Pro Met Met
65 70 75 80

Leu Trp Gly Leu Leu Phe Leu Gly Cys Arg Gln Tyr Leu Ser Leu His
85 90 95

Val Ser Leu Asn Phe Ser Cys Gly Thr Met Glu Phe Ala Leu Leu Gly
100 105 110

Val Met Ala Val Asp Arg Tyr Val Ala Val Cys Asn Pro Leu Arg Tyr
115 120 125

Asn Ile Ile Met Asn Ser Ser Thr Cys Ile Trp Val Val Ile Val Ser
130 135 140

Trp Val Phe Gly Phe Leu Ser Glu Ile Trp Pro Ile Tyr Ala Thr Phe
145 150 155 160

Gln Phe Thr Phe Arg Lys Ser Asn Ser Leu Asp His Phe Tyr Cys Asp
165 170 175

Arg Gly Gln Leu Leu Lys Leu Ser Cys Asp Asn Thr Leu Leu Thr Glu
180 185 190

Phe Ile Leu Phe Leu Met Ala Val Phe Ile Leu Ile Gly Ser Leu Ile
195 200 205

Pro Thr Ile Val Ser Tyr Thr Tyr Ile Ile Ser Thr Ile Leu Lys Ile
210 215 220

Pro Ser Ala Ser Gly Arg Arg Lys Ala Phe Ser Thr Phe Ala Ser His
225 230 235 240

Phe Thr Cys Val Val Ile Gly Tyr Gly Ser Cys Leu Phe Leu Tyr Val
245 250 255

Lys Pro Lys Gln Thr Gln Gly Val Glu Tyr Asn Lys Ile Val Ser Leu

```
            260                 265                 270

Leu Val Ser Val Leu Thr Pro Leu Pro Glu Ser Phe His Leu Tyr Ser
        275                 280                 285

Ser Asp Asp Lys Val Lys Glu Ala Leu Arg Asp Gly Met Lys Arg Cys
    290                 295                 300

Cys Gln Leu Leu Lys Asp
305                 310


<210> 22
<211> 314
<212> PRT
<213> Mus musculus

<400> 22
Met Met Asp Asn Leu Ser Ser Ala Thr Glu Phe Cys Leu Leu Gly Phe
  1               5                  10                  15

Pro Gly Ser Gln Glu Leu His Tyr Ile Leu Phe Ala Ile Phe Phe Phe
             20                  25                  30

Phe Tyr Ser Val Thr Leu Leu Gly Asn Met Val Ile Ile Ile Ile Val
         35                  40                  45

Cys Val Asp Lys Arg Leu Gln Ser Pro Met Tyr Phe Phe Leu Gly Asn
     50                  55                  60

Leu Ser Leu Leu Glu Ile Leu Val Thr Thr Thr Ile Val Pro Leu Met
 65                  70                  75                  80

Leu Trp Gly Leu Leu Leu Pro Gly Lys Gln Thr Ile Ser Leu Asn Gly
                 85                  90                  95

Cys Ile Ala Gln Leu Phe Leu Tyr Leu Ala Leu Gly Thr Thr Glu Phe
            100                 105                 110

Ala Val Leu Gly Ala Met Ala Val Asp Arg Tyr Val Ala Val Cys Asn
        115                 120                 125

Pro Leu Arg Tyr Ser Val Ile Met Asn Ser Arg Thr Cys Ile Trp Val
    130                 135                 140

Val Met Val Ser Trp Met Phe Gly Phe Leu Ser Glu Ile Trp Pro Val
145                 150                 155                 160

Tyr Ala Thr Phe Gln Phe Thr Phe Cys Lys Ser Asn Leu Leu Asp His
                165                 170                 175

Phe Tyr Cys Asp Arg Gly Gln Leu Leu Lys Leu Ser Cys Asn Glu Thr
            180                 185                 190

Phe Leu Thr Glu Phe Ile Leu Phe Ile Met Ala Ile Phe Ile Ile Val
        195                 200                 205
```

```
Gly Ser Leu Ile Pro Thr Ile Val Ser Tyr Thr Tyr Ile Ile Ser Thr
    210                 215                 220

Ile Leu Lys Ile Pro Ser Ala Ser Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ala Ser His Phe Thr Phe Val Val Ile Gly Tyr Gly Thr Cys Leu
                245                 250                 255

Phe Leu Tyr Val Lys Pro Lys Gln Thr Gln Ala Ala Glu Tyr Asn Arg
            260                 265                 270

Val Ala Ser Leu Leu Val Ser Val Val Thr Pro Phe Leu Asn Pro Phe
        275                 280                 285

Ile Phe Thr Leu Arg Asn Asp Lys Val Lys Glu Ala Leu Arg Asp Gly
    290                 295                 300

Val Lys Arg Cys Cys Leu Leu Leu Arg Asp
305                 310
```

<210> 23
<211> 313
<212> PRT
<213> Mus musculus

<400> 23

```
Met Ala Asn Ser Thr Thr Val Thr Glu Phe Ile Leu Leu Gly Leu Ser
  1               5                  10                  15

Asp Ala Cys Glu Leu Gln Val Leu Ile Phe Leu Gly Phe Leu Leu Thr
             20                  25                  30

Tyr Phe Leu Ile Leu Leu Gly Asn Phe Leu Ile Ile Phe Ile Thr Leu
         35                  40                  45

Val Asp Arg Arg Leu Tyr Thr Pro Met Tyr Tyr Phe Leu Arg Asn Phe
     50                  55                  60

Ala Met Leu Glu Ile Trp Phe Thr Ser Val Ile Phe Pro Lys Met Leu
 65                  70                  75                  80

Thr Asn Ile Ile Thr Gly His Lys Thr Ile Ser Leu Leu Gly Cys Phe
                 85                  90                  95

Leu Gln Ala Phe Leu Tyr Phe Phe Leu Gly Thr Thr Glu Phe Phe Leu
            100                 105                 110

Leu Ala Val Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asn Pro Leu
        115                 120                 125

Arg Tyr Ala Thr Ile Met Ser Lys Arg Val Cys Val Gln Leu Val Phe
    130                 135                 140

Cys Ser Trp Met Ser Gly Leu Leu Leu Ile Ile Val Pro Ser Ser Ile
145                 150                 155                 160
```

```
Val Phe Gln Gln Pro Phe Cys Gly Pro Asn Ile Ile Asn His Phe Phe
                165                 170                 175

Cys Asp Asn Phe Pro Leu Met Glu Leu Ile Cys Ala Asp Thr Ser Leu
            180                 185                 190

Val Glu Phe Leu Gly Phe Val Ile Ala Asn Phe Ser Leu Leu Gly Thr
        195                 200                 205

Leu Ala Val Thr Ala Thr Cys Tyr Gly His Ile Leu Tyr Thr Ile Leu
    210                 215                 220

His Ile Pro Ser Ala Lys Glu Arg Lys Lys Ala Phe Ser Thr Cys Ser
225                 230                 235                 240

Ser His Ile Ile Val Val Ser Leu Phe Tyr Gly Ser Cys Ile Phe Met
                245                 250                 255

Tyr Val Arg Ser Gly Lys Asn Gly Gln Gly Glu Asp His Asn Lys Val
            260                 265                 270

Val Ala Leu Leu Asn Thr Val Val Thr Pro Thr Leu Asn Pro Phe Ile
        275                 280                 285

Tyr Thr Leu Arg Asn Lys Gln Val Lys Gln Val Phe Arg Glu His Val
    290                 295                 300

Ser Lys Phe Gln Lys Phe Ser Gln Thr
305                 310
```

<210> 24
<211> 316
<212> PRT
<213> Mus musculus

<400> 24

```
Met Glu Asn Ile Thr Asn Ile Ser Glu Phe Ile Leu Met Gly Phe Pro
  1               5                  10                  15

Thr Ala Pro Trp Leu Gln Ile Leu Leu Phe Ser Ile Phe Phe Ile Thr
             20                  25                  30

Tyr Val Phe Val Leu Leu Glu Asn Leu Val Ile Ile Leu Thr Val Trp
         35                  40                  45

Val Thr Gly Ser Leu His Lys Pro Met Tyr Tyr Phe Leu Ser Thr Met
     50                  55                  60

Ser Phe Leu Glu Ala Trp Tyr Ile Ser Val Thr Val Pro Lys Met Leu
 65                  70                  75                  80

Ala Gly Phe Leu Phe Arg Pro Asn Thr Ile Ser Phe Leu Gly Cys Met
                 85                  90                  95

Thr Gln Leu Tyr Phe Phe Met Ser Leu Ala Cys Thr Glu Cys Val Leu
```

```
            100                 105                 110

Leu Ala Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Trp Pro Leu
        115                 120                 125

Arg Tyr Pro Val Met Met Thr Thr Gly Phe Cys Val Gln Leu Thr Ile
    130                 135                 140

Ser Ser Trp Val Ser Gly Phe Thr Ile Ser Met Ala Lys Val Tyr Phe
145                 150                 155                 160

Ile Ser Arg Val Ala Phe Cys Gly Asn Asn Val Leu Asn His Phe Phe
                165                 170                 175

Cys Asp Val Ser Pro Ile Leu Lys Leu Ala Cys Met Asn Leu Ser Met
            180                 185                 190

Ala Glu Thr Val Asp Phe Ala Leu Ala Ile Val Ile Leu Ile Phe Pro
        195                 200                 205

Leu Ser Ala Thr Val Leu Ser Tyr Gly Phe Ile Val Ser Thr Val Leu
    210                 215                 220

Gln Ile Pro Ser Ala Thr Gly Gln Arg Lys Ala Phe Ser Thr Cys Ala
225                 230                 235                 240

Ser His Leu Thr Val Val Val Ile Phe Tyr Thr Ala Val Ile Phe Met
                245                 250                 255

Tyr Val Arg Pro Arg Ala Ile Ala Ser Phe Asn Ser Asn Lys Leu Ile
            260                 265                 270

Ser Ala Ile Tyr Ala Val Phe Thr Pro Met Leu Asn Pro Ile Ile Tyr
        275                 280                 285

Cys Leu Arg Asn Lys Glu Val Lys Asp Ala Ile Arg Lys Thr Ile Ala
    290                 295                 300

Gly Gly Arg Ala Pro Ala Leu Gly Glu Ser Ile Ser
305                 310                 315


<210> 25
<211> 316
<212> PRT
<213> Mus musculus

<400> 25
Met Glu Asn Ile Thr Asn Ile Ser Glu Phe Ile Leu Met Gly Phe Pro
  1               5                  10                  15

Thr Ala Pro Trp Leu Gln Ile Leu Leu Phe Ser Ile Phe Phe Ile Thr
             20                  25                  30

Tyr Val Phe Val Leu Leu Glu Asn Leu Val Ile Ile Leu Thr Val Trp
         35                  40                  45
```

```
Val Thr Gly Ser Leu His Lys Pro Met Tyr Tyr Phe Leu Ser Thr Met
     50                  55                  60

Ser Phe Leu Glu Ala Trp Tyr Ile Ser Val Thr Val Pro Lys Met Leu
 65                  70                  75                  80

Ala Gly Phe Leu Phe His Pro Asn Thr Ile Ser Phe Leu Gly Cys Met
                 85                  90                  95

Thr Gln Leu Tyr Phe Phe Met Ser Leu Ala Cys Thr Glu Cys Val Leu
            100                 105                 110

Leu Ala Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Trp Pro Leu
        115                 120                 125

Arg Tyr Pro Val Met Met Thr Thr Gly Phe Cys Val Gln Leu Thr Ile
    130                 135                 140

Ser Ser Trp Val Ser Gly Phe Thr Ile Ser Met Ala Lys Val Tyr Phe
145                 150                 155                 160

Leu Ser Arg Val Ala Phe Cys Gly Asn Asn Val Leu Asn His Phe Phe
                165                 170                 175

Cys Asp Val Ser Pro Ile Leu Lys Leu Ala Cys Met Asn Leu Ser Met
            180                 185                 190

Ala Glu Thr Val Asp Phe Ala Leu Ala Ile Val Ile Leu Ile Phe Pro
        195                 200                 205

Leu Ser Ala Thr Val Leu Ser Tyr Gly Phe Ile Val Ser Thr Val Leu
    210                 215                 220

Gln Ile Pro Ser Ala Thr Gly Gln Arg Lys Ala Phe Ser Thr Cys Ala
225                 230                 235                 240

Ser His Leu Thr Val Val Val Ile Phe Tyr Thr Ala Val Ile Phe Met
                245                 250                 255

Tyr Val Arg Pro Arg Ala Ile Ala Ser Phe Asn Ser Asn Lys Leu Ile
            260                 265                 270

Ser Ala Ile Tyr Ala Val Phe Thr Pro Met Leu Asn Pro Ile Ile Tyr
        275                 280                 285

Cys Leu Arg Asn Lys Glu Val Lys Asp Ala Ile Arg Lys Thr Ile Ala
    290                 295                 300

Gly Gly Arg Ala Pro Ala Leu Gly Glu Ser Ile Ser
305                 310                 315
```

<210> 26
<211> 314
<212> PRT
<213> Mus musculus

<400> 26

```
Met Leu Asp Met Asn Ile Thr Leu Val Ser Glu Phe Ile Leu Val Gly
  1               5                  10                  15

Phe Pro Thr Ala Pro Trp Leu Gln Ile Leu Leu Phe Phe Ile Phe Leu
             20                  25                  30

Val Val Tyr Met Leu Ile Ile Ala Glu Asn Leu Val Ile Ile Phe Thr
         35                  40                  45

Val Trp Ser Thr Gly Ser Leu His Lys Pro Met Tyr Tyr Phe Leu Ser
     50                  55                  60

Ser Met Ser Phe Leu Glu Ile Trp Tyr Val Ser Val Thr Val Pro Lys
 65                  70                  75                  80

Met Leu Asp Gly Phe Leu Leu Gln Arg Arg His Ile Ser Phe Thr Gly
                 85                  90                  95

Cys Met Thr Gln Leu Tyr Phe Phe Ile Ser Leu Ala Cys Thr Glu Cys
            100                 105                 110

Val Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His
        115                 120                 125

Pro Leu Arg Tyr Pro Val Ile Met Thr Thr Val Tyr Cys Met Gln Leu
    130                 135                 140

Met Ala Leu Ser Tyr Phe Ser Gly Phe Met Val Ser Val Val Lys Val
145                 150                 155                 160

Tyr Phe Ile Ser His Val Ala Phe Cys Gly Ser Asn Val Met Asn His
                165                 170                 175

Phe Phe Cys Asp Ile Ser Pro Ile Leu Lys Leu Ala Cys Lys Asp Met
            180                 185                 190

Ser Thr Ala Glu Leu Val Asp Phe Ala Leu Ala Ile Val Ile Leu Val
        195                 200                 205

Phe Pro Leu Ile Thr Thr Val Leu Ser Tyr Val Tyr Ile Val Ser Thr
    210                 215                 220

Ile Leu Arg Ile Pro Ser Thr Gln Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ala Ser His Leu Thr Val Val Ile Ile Tyr Tyr Thr Ala Met Ile
                245                 250                 255

Phe Met Tyr Val Arg Pro Arg Ala Ile Ala Ser Phe Asn Ser Asn Lys
            260                 265                 270

Leu Ile Ser Ala Val Tyr Ala Val Leu Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Cys Leu Arg Asn Arg Glu Val Lys Asp Ala Ile Lys Lys Thr
    290                 295                 300
```

```
Leu Gly Gly Gly Gln Cys Phe Leu Leu Cys
305                 310
```

<210> 27
<211> 971
<212> DNA
<213> Homo sapiens

<400> 27
caatgatgga aatagccaat gtgagttctc cagaagtctt tgtcctcctg ggcttctccg 60
cacgaccctc actagaaact gtcctcttca tagttgtctt gagtttttac atggtatcga 120
tcttgggcaa tggcatcatc attctggtct cccatacaga tgtgcacctc cacacaccta 180
tgtacttctt tcttgccaac ctctccttcc tggacatgag cttcaccacg agcattgtcc 240
cacagctcct ggctaacctc tggggaccac agaaaaccat aagctatgga gggtgtgtgg 300
tccagttcta tatctcccat tggctggggg caaccgagtg tgtcctgctg gccaccatgt 360
cctatgaccg ctacgctgcc atctgcaggc cactccatta cactgtcatt atgcatccac 420
agctttgcct tgggctagct ttggcctcct ggctgggggg tctgaccacc agcatggtgg 480
gctccacgct caccatgctc ctaccgctgt gtgggaacaa ttgcatcgac cacttctttt 540
gcgagatgcc cctcattatg caactggctt gtgtggatac cagcctcaat gagatggaga 600
tgtacctggc cagctttgtc tttgttgtcc tgcctctggg gctcatcctg gtctcttacg 660
gccacattgc ccgggccgtg ttgaagatca ggtcagcaga agggcggaga aaggcattca 720
acacctgttc ttcccacgtg gctgtggtgt ctctgtttta cgggagcatc atcttcatgt 780
atctccagcc agccaagagc acctcccatg agcagggcaa gttcatagct ctgttctaca 840
ccgtagtcac tcctgcgttg aacccagtta tttacaccct gaggaacacg gaggtgaaga 900
gcgccctccg gcacatggta ttagagaact gctgtggctc tgcaggcaag ctggcgcaaa 960
tttagagact c   971

<210> 28
<211> 320
<212> PRT
<213> Homo sapiens

<400> 28
```
Met Met Glu Ile Ala Asn Val Ser Ser Pro Glu Val Phe Val Leu Leu
  1               5                  10                  15

Gly Phe Ser Ala Arg Pro Ser Leu Glu Thr Val Leu Phe Ile Val Val
             20                  25                  30

Leu Ser Phe Tyr Met Val Ser Ile Leu Gly Asn Gly Ile Ile Ile Leu
         35                  40                  45

Val Ser His Thr Asp Val His Leu His Thr Pro Met Tyr Phe Phe Leu
     50                  55                  60

Ala Asn Leu Ser Phe Leu Asp Met Ser Phe Thr Thr Ser Ile Val Pro
 65                  70                  75                  80

Gln Leu Leu Ala Asn Leu Trp Gly Pro Gln Lys Thr Ile Ser Tyr Gly
                 85                  90                  95

Gly Cys Val Val Gln Phe Tyr Ile Ser His Trp Leu Gly Ala Thr Glu
            100                 105                 110
```

```
Cys Val Leu Leu Ala Thr Met Ser Tyr Asp Arg Tyr Ala Ala Ile Cys
        115                 120                 125

Arg Pro Leu His Tyr Thr Val Ile Met His Pro Gln Leu Cys Leu Gly
    130                 135                 140

Leu Ala Leu Ala Ser Trp Leu Gly Gly Leu Thr Thr Ser Met Val Gly
145                 150                 155                 160

Ser Thr Leu Thr Met Leu Leu Pro Leu Cys Gly Asn Asn Cys Ile Asp
                165                 170                 175

His Phe Phe Cys Glu Met Pro Leu Ile Met Gln Leu Ala Cys Val Asp
            180                 185                 190

Thr Ser Leu Asn Glu Met Glu Met Tyr Leu Ala Ser Phe Val Phe Val
        195                 200                 205

Val Leu Pro Leu Gly Leu Ile Leu Val Ser Tyr Gly His Ile Ala Arg
    210                 215                 220

Ala Val Leu Lys Ile Arg Ser Ala Glu Gly Arg Arg Lys Ala Phe Asn
225                 230                 235                 240

Thr Cys Ser Ser His Val Ala Val Val Ser Leu Phe Tyr Gly Ser Ile
                245                 250                 255

Ile Phe Met Tyr Leu Gln Pro Ala Lys Ser Thr Ser His Glu Gln Gly
            260                 265                 270

Lys Phe Ile Ala Leu Phe Tyr Thr Val Val Thr Pro Ala Leu Asn Pro
        275                 280                 285

Val Ile Tyr Thr Leu Arg Asn Thr Glu Val Lys Ser Ala Leu Arg His
    290                 295                 300

Met Val Leu Glu Asn Cys Cys Gly Ser Ala Gly Lys Leu Ala Gln Ile
305                 310                 315                 320
```

<210> 29
<211> 312
<212> PRT
<213> Mus musculus

<400> 29

```
Met Glu Val Asp Ser Asn Ser Ser Ser Gly Thr Phe Ile Leu Met Gly
  1               5                  10                  15

Val Ser Asp His Pro His Leu Glu Ile Ile Phe Phe Ala Val Ile Leu
             20                  25                  30

Ala Ser Tyr Leu Leu Thr Leu Val Gly Asn Leu Thr Ile Ile Leu Leu
         35                  40                  45
```

```
Ser Arg Leu Asp Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser
     50                  55                  60

Asn Leu Ser Ser Leu Asp Leu Ala Phe Thr Thr Ser Ser Val Pro Gln
 65                  70                  75                  80

Met Leu Lys Asn Leu Trp Gly Pro Asp Lys Thr Ile Ser Tyr Gly Gly
                 85                  90                  95

Cys Val Thr Gln Leu Tyr Val Phe Leu Trp Leu Gly Ala Thr Glu Cys
            100                 105                 110

Ile Leu Leu Val Val Met Ala Phe Asp Arg Tyr Val Ala Val Cys Arg
        115                 120                 125

Pro Leu His Tyr Met Thr Val Met Asn Pro Arg Leu Cys Trp Gly Leu
    130                 135                 140

Ala Ala Ile Ser Trp Leu Gly Gly Leu Gly Asn Ser Val Ile Gln Ser
145                 150                 155                 160

Thr Phe Thr Leu Gln Leu Pro Phe Cys Gly His Arg Lys Val Asp Asn
                165                 170                 175

Phe Leu Cys Glu Val Pro Ala Met Ile Lys Leu Ala Cys Gly Asp Thr
            180                 185                 190

Ser Leu Asn Glu Ala Val Leu Asn Gly Val Cys Thr Phe Phe Thr Val
        195                 200                 205

Val Pro Val Ser Val Ile Leu Val Ser Tyr Cys Phe Ile Ala Gln Ala
    210                 215                 220

Val Met Lys Ile Arg Ser Val Glu Gly Arg Arg Lys Ala Phe Asn Thr
225                 230                 235                 240

Cys Val Ser His Leu Val Val Val Phe Leu Phe Tyr Gly Ser Ala Ile
                245                 250                 255

Tyr Gly Tyr Leu Leu Pro Ala Lys Ser Ser Asn Gln Ser Gln Gly Lys
            260                 265                 270

Phe Ile Ser Leu Phe Tyr Ser Val Val Thr Pro Met Val Asn Pro Leu
        275                 280                 285

Ile Tyr Thr Leu Arg Asn Lys Glu Val Lys Gly Ala Leu Gly Arg Leu
    290                 295                 300

Leu Gly Lys Gly Arg Gly Ala Ser
305                 310
```

<210> 30
<211> 312
<212> PRT
<213> Homo sapiens

<400> 30

```
Met Leu Met Lys Lys Asn Ala Ser Phe Glu Asp Phe Phe Ile Leu Leu
  1               5                  10                  15

Gly Phe Ser Asn Trp Pro His Leu Glu Val Val Leu Phe Val Val Ile
             20                  25                  30

Leu Ile Phe Tyr Leu Ile Thr Leu Ile Gly Asn Leu Phe Ile Ile Ile
         35                  40                  45

Leu Ser Tyr Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
     50                  55                  60

Ser Asn Leu Ser Phe Leu Asp Leu Cys Tyr Thr Thr Ser Ser Ile Pro
 65                  70                  75                  80

Gln Leu Leu Val Asn Leu Trp Gly Pro Glu Lys Thr Ile Ser Tyr Ala
                 85                  90                  95

Gly Cys Thr Val Gln Leu Tyr Phe Val Leu Ala Leu Gly Thr Ala Glu
            100                 105                 110

Cys Val Leu Leu Val Val Met Ser Tyr Asp Arg Tyr Ala Ala Val Cys
        115                 120                 125

Arg Pro Leu His Tyr Thr Val Leu Met His Pro Arg Phe Cys Arg Leu
    130                 135                 140

Leu Ala Ala Ala Ser Trp Val Ser Gly Phe Thr Thr Ser Ala Leu His
145                 150                 155                 160

Ser Ser Phe Thr Phe Trp Ile Pro Leu Cys Arg His Arg Leu Val Asp
                165                 170                 175

His Phe Phe Cys Glu Val Pro Ala Leu Leu Arg Leu Ser Cys Val Asp
            180                 185                 190

Thr Gln Ala Asn Glu Leu Thr Leu Met Val Met Ser Ser Ile Phe Val
        195                 200                 205

Leu Ile Pro Leu Ile Leu Ile Leu Thr Ser Tyr Gly Ala Ile Ala Arg
    210                 215                 220

Ala Val Leu Ser Met Gln Ser Thr Thr Gly Leu Gln Lys Val Leu Arg
225                 230                 235                 240

Thr Cys Gly Ala His Leu Met Val Val Ser Leu Phe Phe Ile Pro Val
                245                 250                 255

Met Cys Met Tyr Leu Gln Pro Pro Ser Glu Asn Ser Gln Asp Gln Gly
            260                 265                 270

Lys Phe Ile Ala Leu Phe Tyr Thr Val Val Thr Pro Ser Leu Asn Pro
        275                 280                 285

Leu Ile Tyr Thr Phe Arg Asn Lys Asp Val Arg Gly Ala Val Lys Arg
```

```
    290                 295                 300

Leu Met Gly Trp Glu Trp Gly Met
305                 310
```

<210> 31
<211> 312
<212> PRT
<213> Homo sapiens

<400> 31

```
Met Leu Met Lys Lys Asn Ala Ser Phe Glu Asp Phe Phe Leu Leu Leu
  1               5                  10                  15

Gly Phe Ser Asn Trp Pro His Leu Glu Val Val Leu Phe Val Val Ile
             20                  25                  30

Leu Ile Phe Tyr Leu Ile Thr Leu Ile Gly Asn Leu Phe Ile Ile Ile
         35                  40                  45

Leu Ser Tyr Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
     50                  55                  60

Ser Asn Leu Ser Phe Leu Asp Leu Cys Tyr Thr Thr Ser Ser Ile Pro
 65                  70                  75                  80

Gln Leu Leu Val Asn Leu Trp Gly Pro Glu Lys Thr Ile Ser Tyr Ala
                 85                  90                  95

Gly Cys Thr Val Gln Leu Tyr Phe Val Leu Ala Leu Gly Thr Ala Glu
            100                 105                 110

Cys Val Leu Leu Val Val Met Ser Tyr Asp Arg Tyr Ala Ala Val Cys
        115                 120                 125

Arg Pro Leu His Tyr Thr Val Leu Met His Pro Arg Phe Cys Arg Leu
    130                 135                 140

Leu Ala Ala Ala Ser Trp Val Ser Gly Phe Thr Thr Ser Ala Leu His
145                 150                 155                 160

Ser Ser Phe Thr Phe Trp Ile Pro Leu Cys Arg His Arg Leu Val Asp
                165                 170                 175

His Phe Phe Cys Glu Val Pro Ala Leu Leu Arg Leu Ser Cys Val Asp
            180                 185                 190

Thr Gln Ala Asn Glu Leu Thr Leu Met Val Met Ser Ser Ile Phe Val
        195                 200                 205

Leu Ile Pro Leu Ile Leu Ile Leu Thr Ser Tyr Gly Ala Ile Ala Arg
    210                 215                 220

Ala Val Leu Ser Met Gln Ser Thr Thr Gly Leu Gln Lys Val Leu Arg
225                 230                 235                 240
```

```
Thr Cys Gly Ala His Leu Met Val Val Ser Leu Phe Phe Ile Pro Val
                245                 250                 255

Met Cys Met Tyr Leu Gln Pro Pro Ser Glu Asn Ser Gln Asp Gln Gly
            260                 265                 270

Lys Phe Ile Ala Leu Phe Tyr Thr Val Val Thr Pro Ser Leu Asn Pro
        275                 280                 285

Leu Ile Tyr Thr Phe Arg Asn Lys Asp Val Arg Gly Ala Val Lys Arg
    290                 295                 300

Leu Met Gly Trp Glu Trp Gly Met
305                 310
```

<210> 32
<211> 311
<212> PRT
<213> Homo sapiens

<400> 32

```
Met Asn Asp Asp Gly Lys Val Asn Ala Ser Ser Glu Gly Tyr Phe Ile
  1               5                  10                  15

Leu Val Gly Phe Ser Asn Trp Pro His Leu Glu Val Val Ile Phe Val
             20                  25                  30

Val Val Leu Ile Phe Tyr Leu Met Thr Leu Ile Gly Asn Leu Phe Ile
         35                  40                  45

Ile Ile Leu Ser Tyr Leu Asp Ser His Leu His Thr Pro Met Tyr Phe
     50                  55                  60

Phe Leu Ser Asn Leu Ser Phe Leu Asp Leu Cys Tyr Thr Thr Ser Ser
 65                  70                  75                  80

Ile Pro Gln Leu Leu Val Asn Leu Trp Gly Pro Glu Lys Thr Ile Ser
                 85                  90                  95

Tyr Ala Gly Cys Met Ile Gln Leu Tyr Phe Val Leu Ala Leu Gly Thr
            100                 105                 110

Thr Glu Cys Val Leu Leu Val Val Met Ser Tyr Asp Arg Tyr Ala Ala
        115                 120                 125

Val Cys Arg Pro Leu His Tyr Thr Val Leu Met His Pro Arg Phe Cys
    130                 135                 140

His Leu Leu Ala Val Ala Ser Trp Val Ser Gly Phe Thr Asn Ser Ala
145                 150                 155                 160

Leu His Ser Ser Phe Thr Phe Trp Val Pro Leu Cys Gly His Arg Gln
                165                 170                 175

Val Asp His Phe Phe Cys Glu Val Pro Ala Leu Leu Arg Leu Ser Cys
            180                 185                 190
```

```
Val Asp Thr His Val Asn Glu Leu Thr Leu Met Ile Thr Ser Ser Ile
        195                 200                 205

Phe Val Leu Ile Pro Leu Ile Leu Ile Leu Thr Ser Tyr Gly Ala Ile
    210                 215                 220

Val Arg Ala Val Leu Arg Met Gln Ser Thr Thr Gly Leu Gln Lys Val
225                 230                 235                 240

Phe Gly Thr Cys Gly Ala His Leu Met Ala Val Ser Leu Phe Phe Ile
                245                 250                 255

Pro Ala Met Cys Ile Tyr Leu Gln Pro Pro Ser Gly Asn Ser Gln Asp
            260                 265                 270

Gln Gly Lys Phe Ile Ala Leu Phe Tyr Thr Val Val Thr Pro Ser Leu
        275                 280                 285

Asn Pro Leu Ile Tyr Thr Leu Arg Asn Lys Val Val Arg Gly Ala Val
    290                 295                 300

Lys Arg Leu Met Gly Trp Glu
305                 310
```

<210> 33
<211> 320
<212> PRT
<213> Homo sapiens

<400> 33

```
Met Asp Gln Ser Asn Tyr Ser Ser Leu His Gly Phe Ile Leu Leu Gly
  1               5                  10                  15

Phe Ser Asn His Pro Lys Met Glu Met Ile Leu Ser Gly Val Val Ala
             20                  25                  30

Ile Phe Tyr Leu Ile Thr Leu Val Gly Asn Thr Ala Ile Ile Leu Ala
         35                  40                  45

Ser Leu Leu Asp Ser Gln Leu His Thr Pro Met Tyr Phe Phe Leu Arg
     50                  55                  60

Asn Leu Ser Phe Leu Asp Leu Cys Phe Thr Thr Ser Ile Ile Pro Gln
 65                  70                  75                  80

Met Leu Val Asn Leu Trp Gly Pro Asp Lys Thr Ile Ser Tyr Val Gly
                 85                  90                  95

Cys Ile Ile Gln Leu Tyr Val Tyr Met Trp Leu Gly Ser Val Glu Cys
            100                 105                 110

Leu Leu Leu Ala Val Met Ser Tyr Asp Arg Phe Thr Ala Ile Cys Lys
        115                 120                 125

Pro Leu His Tyr Phe Val Val Met Asn Pro His Leu Cys Leu Lys Met
```

```
    130                 135                 140

Ile Ile Met Ile Trp Ser Ile Ser Leu Ala Asn Ser Val Val Leu Cys
145                 150                 155                 160

Thr Leu Thr Leu Asn Leu Pro Thr Cys Gly Asn Asn Ile Leu Asp His
                165                 170                 175

Phe Leu Cys Glu Leu Pro Ala Leu Val Lys Ile Ala Cys Val Asp Thr
            180                 185                 190

Thr Thr Val Glu Met Ser Val Phe Ala Leu Gly Ile Ile Ile Val Leu
        195                 200                 205

Thr Pro Leu Ile Leu Ile Leu Ile Ser Tyr Gly Tyr Ile Ala Lys Ala
    210                 215                 220

Val Leu Arg Thr Lys Ser Lys Ala Ser Gln Arg Lys Ala Met Asn Thr
225                 230                 235                 240

Cys Gly Ser His Leu Thr Val Val Ser Met Phe Tyr Gly Thr Ile Ile
                245                 250                 255

Tyr Met Tyr Leu Gln Pro Gly Asn Arg Ala Ser Lys Asp Gln Gly Lys
            260                 265                 270

Phe Leu Thr Leu Phe Tyr Thr Val Ile Thr Pro Ser Leu Asn Pro Leu
        275                 280                 285

Ile Tyr Thr Leu Arg Asn Lys Asp Met Lys Asp Ala Leu Lys Lys Leu
    290                 295                 300

Met Arg Phe His His Lys Ser Thr Lys Ile Lys Arg Asn Cys Lys Ser
305                 310                 315                 320
```

<210> 34
<211> 1025
<212> DNA
<213> Homo sapiens

<400> 34
agctgtggac catctcttca gaactctgca gcatggagcc gctcaacaga acagaggtgt 60
ccgagttctt tctgaaagga ttttctggct acccagccct ggagcatctg ctcttccctc 120
tgtgctcagc catgtacctg gtgaccctcc tggggaacac agccatcatg gcggtgagcg 180
tgctagatat ccacctgcac acgcccgtgt acttcttcct gggcaacctc tctaccctgg 240
acatctgcta cacgcccacc tttgtgcctc tgatgctggt ccacctcctg tcatcccgga 300
agaccatctc ctttgctgtc tgtgccatcc agatgtgtct gagcctgtcc acgggctcca 360
cggagtgcct gctactggcc atcacggcct atgaccgcta cctggccatc tgccagccac 420
tcaggtacca cgtgctcatg agccaccggc tctgcgtgct gctgatggga gctgcctggg 480
tcctctgcct cctcaagtcg gtgactgaga tggtcatctc catgaggctg cccttctgtg 540
gccaccacgt ggtcagtcac ttcacctgca agatcctggc agtgctgaag ctggcatgcg 600
gcaacacgtc ggtcagcgaa gacttcctgc tggcgggctc catcctgctg ctgcctgtac 660
ccctggcatt catctgcctg tcctacttgc tcatcctggc caccatcctg agggtgccct 720

cggccgccag gtgctgcaaa gccttctcca cctgcttggc acacctggct gtagtgctgc 780
ttttctacgg caccatcatc ttcatgtact tgaagcccaa gagtaaggaa gcccacatct 840
ctgatgaggt cttcacagtc ctctatgcca tggtcacgac catgctgaac cccaccatct 900
acagcctgag gaacaaggag gtgaaggagg ccgccaggaa ggtgtggggc aggagtcggg 960
cctccaggtg agggagggcg gggctctgta cagacgcagg tctcaggtta gtagctgagg 1020
ccatc 1025

<210> 35
<211> 312
<212> PRT
<213> Homo sapiens

<400> 35
Met Glu Pro Leu Asn Arg Thr Glu Val Ser Glu Phe Phe Leu Lys Gly
1 5 10 15

Phe Ser Gly Tyr Pro Ala Leu Glu His Leu Leu Phe Pro Leu Cys Ser
20 25 30

Ala Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Met Ala Val
35 40 45

Ser Val Leu Asp Ile His Leu His Thr Pro Val Tyr Phe Phe Leu Gly
50 55 60

Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu
65 70 75 80

Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Val
85 90 95

Cys Ala Ile Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys
100 105 110

Leu Leu Leu Ala Ile Thr Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln
115 120 125

Pro Leu Arg Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Leu
130 135 140

Met Gly Ala Ala Trp Val Leu Cys Leu Leu Lys Ser Val Thr Glu Met
145 150 155 160

Val Ile Ser Met Arg Leu Pro Phe Cys Gly His His Val Val Ser His
165 170 175

Phe Thr Cys Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr
180 185 190

Ser Val Ser Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Leu Pro
195 200 205

Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr
210 215 220

Ile Leu Arg Val Pro Ser Ala Ala Arg Cys Cys Lys Ala Phe Ser Thr

```
225                 230                 235                 240

Cys Leu Ala His Leu Ala Val Val Leu Leu Phe Tyr Gly Thr Ile Ile
                245                 250                 255

Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Glu
            260                 265                 270

Val Phe Thr Val Leu Tyr Ala Met Val Thr Thr Met Leu Asn Pro Thr
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Ala Arg Lys Val
    290                 295                 300

Trp Gly Arg Ser Arg Ala Ser Arg
305                 310
```

<210> 36
<211> 917
<212> DNA
<213> Homo sapiens

<400> 36

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tgctcttccc tctgtgctca gccatgtacc tggtgaccct cctggggaac acagccatca 60
tggcggtgag cgtgctagat atccacctgc acacgcccgt gtacttcttc ctgggcaacc 120
tctctaccct ggacatctgc tacacgccca cctttgtgcc tctgatgctg gtccacctcc 180
tgtcatcccg gaagaccatc tcctttgctg tctgtgccat ccagatgtgt ctgagcctgt 240
ccacgggctc cacggagtgc ctgctactgg ccatcacggc ctatgaccgc tacctggcca 300
tctgccagcc actcaggtac cacgtgctca tgagccaccg gctctgcgtg ctgctgatgg 360
gagctgcctg ggtcctctgc ctcctcaagt cggtgactga gatggtcatc tccatgaggc 420
tgcccttctg tggccaccac gtggtcagtc acttcacctg caagatcctg gcagtgctga 480
agctggcatg cggcaacacg tcggtcagcg aagacttcct gctggcgggc tccatcctgc 540
tgctgcctgt acccctggca ttcatctgcc tgtcctactt gctcatcctg gccaccatcc 600
tgagggtgcc ctcggccgcc aggtgctgca aagccttctc cacctgcttg gcacacctgg 660
ctgtagtgct gcttttctac ggcaccatca tcttcatgta cttgaagccc aagagtaagg 720
aagcccacat ctctgatgag gtcttcacag tcctctatgc catggtcacg accatgctga 780
accccaccat ctacagcctg aggaacaagg aggtgaagga ggccgccagg aaggtgtggg 840
gcaggagtcg ggcctccagg tgagggaggg cggggctctg tacagacgca ggtctcaggt 900
tagtagctga ggccatc                                                 917
```

<210> 37
<211> 286
<212> PRT
<213> Homo sapiens

<400> 37

```
Leu Phe Pro Leu Cys Ser Ala Met Tyr Leu Val Thr Leu Leu Gly Asn
  1               5                  10                  15

Thr Ala Ile Met Ala Val Ser Val Leu Asp Ile His Leu His Thr Pro
             20                  25                  30

Val Tyr Phe Phe Leu Gly Asn Leu Ser Thr Leu Asp Ile Cys Tyr Thr
         35                  40                  45
```

```
Pro Thr Phe Val Pro Leu Met Leu Val His Leu Leu Ser Ser Arg Lys
     50                  55                  60

Thr Ile Ser Phe Ala Val Cys Ala Ile Gln Met Cys Leu Ser Leu Ser
 65                  70                  75                  80

Thr Gly Ser Thr Glu Cys Leu Leu Leu Ala Ile Thr Ala Tyr Asp Arg
                 85                  90                  95

Tyr Leu Ala Ile Cys Gln Pro Leu Arg Tyr His Val Leu Met Ser His
            100                 105                 110

Arg Leu Cys Val Leu Leu Met Gly Ala Ala Trp Val Leu Cys Leu Leu
        115                 120                 125

Lys Ser Val Thr Glu Met Val Ile Ser Met Arg Leu Pro Phe Cys Gly
    130                 135                 140

His His Val Val Ser His Phe Thr Cys Lys Ile Leu Ala Val Leu Lys
145                 150                 155                 160

Leu Ala Cys Gly Asn Thr Ser Val Ser Glu Asp Phe Leu Leu Ala Gly
                165                 170                 175

Ser Ile Leu Leu Leu Pro Val Pro Leu Ala Phe Ile Cys Leu Ser Tyr
            180                 185                 190

Leu Leu Ile Leu Ala Thr Ile Leu Arg Val Pro Ser Ala Ala Arg Cys
        195                 200                 205

Cys Lys Ala Phe Ser Thr Cys Leu Ala His Leu Ala Val Val Leu Leu
    210                 215                 220

Phe Tyr Gly Thr Ile Ile Phe Met Tyr Leu Lys Pro Lys Ser Lys Glu
225                 230                 235                 240

Ala His Ile Ser Asp Glu Val Phe Thr Val Leu Tyr Ala Met Val Thr
                245                 250                 255

Thr Met Leu Asn Pro Thr Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys
            260                 265                 270

Glu Ala Ala Arg Lys Val Trp Gly Arg Ser Arg Ala Ser Arg
        275                 280                 285


<210> 38
<211> 312
<212> PRT
<213> Mus musculus

<400> 38
Met Glu Pro Ser Asn Arg Thr Ala Val Ser Glu Phe Val Leu Lys Gly
  1               5                  10                  15

Phe Ser Gly Tyr Pro Ala Leu Glu Arg Leu Leu Phe Pro Leu Cys Ser
             20                  25                  30
```

```
Val Met Tyr Leu Val Thr Leu Leu Gly Asn Thr Ala Ile Val Ala Val
         35                  40                  45

Ser Met Leu Asp Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly
     50                  55                  60

Asn Leu Ser Ile Leu Asp Ile Cys Tyr Thr Ser Thr Phe Val Pro Leu
 65                  70                  75                  80

Met Leu Val His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Thr Gly
                 85                  90                  95

Cys Ala Val Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys
            100                 105                 110

Leu Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln
        115                 120                 125

Pro Leu Arg Tyr Pro Val Leu Met Ser His Arg Leu Cys Leu Met Leu
    130                 135                 140

Ala Gly Ala Ser Trp Val Leu Cys Leu Phe Lys Ser Val Ala Glu Thr
145                 150                 155                 160

Val Ile Ala Met Arg Leu Pro Phe Cys Gly His His Val Ile Arg His
                165                 170                 175

Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Thr Cys Gly Asp Thr
            180                 185                 190

Ser Val Ser Asp Ala Phe Leu Leu Val Gly Ala Ile Leu Leu Leu Pro
        195                 200                 205

Ile Pro Leu Thr Leu Ile Cys Leu Ser Tyr Met Leu Ile Leu Ala Thr
    210                 215                 220

Ile Leu Arg Val Pro Ser Ala Thr Gly Arg Ser Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ser Ala His Leu Ala Val Val Leu Leu Phe Tyr Ser Thr Ile Ile
                245                 250                 255

Phe Met Tyr Met Lys Pro Lys Ser Lys Glu Ala Arg Ile Ser Asp Gln
            260                 265                 270

Val Phe Thr Val Leu Tyr Ala Val Val Thr Pro Met Leu Asn Pro Ile
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Ala Arg Lys Ala
    290                 295                 300

Trp Gly Ser Arg Trp Ala Cys Arg
305                 310
```

<210> 39

<211> 216
<212> PRT
<213> Homo sapiens

<400> 39
Thr Leu Asp Ile Cys Tyr Thr Pro Thr Phe Val Pro Leu Met Leu Val
1 5 10 15

His Leu Leu Ser Ser Arg Lys Thr Ile Ser Phe Ala Val Cys Ala Ile
20 25 30

Gln Met Cys Leu Ser Leu Ser Thr Gly Ser Thr Glu Cys Leu Leu Leu
35 40 45

Ala Ile Thr Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Gln Pro Leu Arg
50 55 60

Tyr His Val Leu Met Ser His Arg Leu Cys Val Leu Leu Met Gly Ala
65 70 75 80

Ala Trp Val Leu Cys Leu Leu Lys Ser Val Thr Glu Met Val Ile Ser
85 90 95

Met Arg Leu Pro Phe Cys Gly His His Val Val Ser His Phe Thr Cys
100 105 110

Lys Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asn Thr Ser Val Ser
115 120 125

Glu Asp Phe Leu Leu Ala Gly Ser Ile Leu Leu Leu Pro Val Pro Leu
130 135 140

Ala Phe Ile Cys Leu Ser Tyr Leu Leu Ile Leu Ala Thr Ile Leu Arg
145 150 155 160

Val Pro Ser Ala Ala Arg Cys Cys Lys Ala Phe Ser Thr Cys Leu Ala
165 170 175

His Leu Ala Val Val Leu Leu Phe Tyr Gly Thr Ile Ile Phe Met Tyr
180 185 190

Leu Lys Pro Lys Ser Lys Glu Ala His Ile Ser Asp Glu Val Phe Thr
195 200 205

Val Leu Tyr Ala Met Val Thr Thr
210 215

<210> 40
<211> 319
<212> PRT
<213> Mus musculus

<400> 40
Met Asp Arg Ser Asn Glu Thr Ala Pro Leu Ser Gly Phe Ile Leu Leu
1 5 10 15

```
Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile
            20                  25                  30

Leu Met Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu
        35                  40                  45

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
    50                  55                  60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro
65                  70                  75                  80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser
                85                  90                  95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu
            100                 105                 110

Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Asn Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro
    130                 135                 140

Met Ala Ala Ser Ser Trp Ala Gly Gly Ile Thr Asn Ser Val Val Gln
145                 150                 155                 160

Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn
                165                 170                 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp
            180                 185                 190

Ile Ser Ile Asn Val Ile Ser Met Val Val Ala Asn Met Ile Phe Leu
        195                 200                 205

Ala Val Pro Val Leu Phe Ile Phe Val Ser Tyr Val Phe Ile Leu Val
    210                 215                 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
                245                 250                 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp
            260                 265                 270

Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val
        275                 280                 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
    290                 295                 300

Arg Ala Ala Val Arg Asn Leu Val Gly Gln Lys His Leu Thr Glu
305                 310                 315
```

<210> 41
<211> 319
<212> PRT
<213> Mus musculus

<400> 41
Met Glu Arg Ser Asn Lys Thr Thr Pro Val Ser Ser Phe Ile Leu Leu
1 5 10 15

Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile
20 25 30

Leu Leu Met Tyr Leu Val Ile Leu Leu Gly Asn Val Val Leu Ile Leu
35 40 45

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
50 55 60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro
65 70 75 80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser
85 90 95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu
100 105 110

Cys Val Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
115 120 125

Asn Pro Leu Arg Tyr Pro Val Val Met Ser Lys Ala Ala Tyr Val Pro
130 135 140

Met Ala Ala Gly Ser Trp Val Ser Gly Ser Ile Thr Ala Thr Val Gln
145 150 155 160

Ile Ser Leu Ala Met Thr Leu Pro Phe Cys Gly Asp Asn Val Ile Asn
165 170 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp
180 185 190

Ile Ser Ile Asn Val Ile Ser Met Ala Val Ala Asn Ala Met Phe Leu
195 200 205

Gly Val Pro Val Leu Phe Ile Phe Val Ser Tyr Ile Phe Ile Leu Ser
210 215 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser
225 230 235 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
245 250 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp
260 265 270

```
Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val
        275                 280                 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
    290                 295                 300

Lys Ala Ala Val Thr Asn Leu Val Gly Gln Lys His Phe Lys Trp
305                 310                 315


<210> 42
<211> 318
<212> PRT
<213> Homo sapiens

<400> 42
Met Glu Gly Ala Asn Gln Ser Thr Val Ala Glu Phe Val Leu Leu Gly
  1               5                  10                  15

Leu Ser Asp His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile Leu
             20                  25                  30

Leu Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu Val
         35                  40                  45

Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu Gly
     50                  55                  60

Asp Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Ile Pro Leu
 65                  70                  75                  80

Val Leu Asp Gly Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser Gly
                 85                  90                  95

Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu Cys
            100                 105                 110

Val Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Asn
        115                 120                 125

Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ser Ala Tyr Val Pro Met
    130                 135                 140

Ala Val Ser Ser Trp Val Ala Gly Gly Ala Asn Ser Leu Val Gln Ile
145                 150                 155                 160

Ser Leu Ala Val Gln Leu Pro Phe Cys Gly Asp Asn Val Ile Asn His
                165                 170                 175

Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp Ile
            180                 185                 190

Ser Ile Asn Val Ile Ser Met Gly Val Ala Asn Val Ile Phe Leu Gly
        195                 200                 205

Val Pro Val Leu Phe Ile Phe Val Ser Tyr Ile Phe Ile Leu Ser Thr
```

```
    210                 215                 220

Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile Leu
                245                 250                 255

Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp Lys
            260                 265                 270

Gln Asp Val Ser Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Leu Thr
        275                 280                 285

Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys
    290                 295                 300

Ala Ala Val Arg Asn Leu Val Gly Gln Lys Cys Leu Ile Gln
305                 310                 315
```

<210> 43
<211> 2028
<212> DNA
<213> Homo sapiens

<400> 43

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```

<210> 44
<211> 326
<212> PRT
<213> Homo sapiens

<400> 44

```
Met Lys Trp Ala Asn Gln Thr Ala Val Thr Glu Tyr Val Leu Met Gly
  1               5                  10                  15

Leu His Glu His Cys Asn Leu Glu Val Val Leu Phe Val Phe Cys Leu
             20                  25                  30

Gly Ile Tyr Ser Val Asn Val Leu Gly Asn Ala Leu Leu Ile Gly Leu
         35                  40                  45

Asn Val Leu His Pro Arg Leu His Asn Pro Met Tyr Phe Leu Leu Ser
     50                  55                  60

Asn Leu Ser Leu Met Asp Ile Cys Gly Thr Ser Ser Phe Val Pro Leu
 65                  70                  75                  80

Met Leu Asp Asn Phe Leu Glu Thr Gln Arg Thr Ile Ser Phe Pro Gly
                 85                  90                  95

Cys Ala Leu Gln Met Tyr Leu Thr Leu Ala Leu Gly Ser Thr Glu Cys
            100                 105                 110

Leu Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Gln
        115                 120                 125

Pro Leu Arg Tyr Pro Glu Leu Met Ser Gly Gln Thr Cys Met Gln Met
    130                 135                 140

Ala Ala Leu Ser Trp Gly Thr Gly Phe Ala Asn Ser Leu Leu Gln Ser
145                 150                 155                 160

Ile Leu Val Trp His Leu Pro Phe Cys Gly His Val Ile Asn Tyr Phe
                165                 170                 175

Tyr Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asp Ile Ser Leu
            180                 185                 190

Asn Ala Leu Ala Leu Met Val Ala Thr Ala Val Leu Thr Leu Ala Pro
        195                 200                 205

Leu Leu Leu Ile Cys Leu Ser Tyr Leu Phe Ile Leu Ser Ala Ile Leu
    210                 215                 220

Arg Val Pro Ser Ala Ala Gly Arg Cys Lys Ala Phe Ser Thr Cys Ser
225                 230                 235                 240
```

```
Ala His Arg Thr Val Val Val Val Phe Tyr Gly Thr Ile Ser Phe Met
                245                 250                 255

Tyr Phe Lys Pro Lys Ala Lys Asp Pro Asn Val Asp Lys Thr Val Ala
            260                 265                 270

Leu Phe Tyr Gly Val Val Thr Pro Ser Leu Asn Pro Ile Ile Tyr Ser
        275                 280                 285

Leu Arg Asn Ala Glu Val Lys Ala Ala Val Leu Thr Leu Leu Arg Gly
    290                 295                 300

Gly Leu Leu Ser Arg Lys Ala Ser His Cys Tyr Cys Cys Pro Leu Pro
305                 310                 315                 320

Leu Ser Ala Gly Ile Gly
                325
```

<210> 45
<211> 315
<212> PRT
<213> Mus musculus

<400> 45

```
Met Ala Gly Thr Asn His Thr Glu Val Ile Glu Tyr Val Leu Leu Gly
  1               5                  10                  15

Leu Gln Asp His His Gly Leu Glu Ile Ala Leu Phe Val Leu Cys Leu
             20                  25                  30

Gly Ile Tyr Cys Met Thr Leu Leu Gly Asn Ser Phe Leu Val Gly Leu
         35                  40                  45

Ile Val Leu Asp Thr His Leu His Ser Pro Met Tyr Phe Phe Ile Ser
     50                  55                  60

Asn Leu Ser Leu Ile Asp Ile Cys Gly Thr Ser Ser Phe Thr Pro Met
 65                  70                  75                  80

Met Leu Leu Asn Phe Leu Asp Val Gln Arg Thr Ile Ser Phe Pro Ser
                 85                  90                  95

Cys Ala Leu Gln Met Tyr Leu Thr Leu Ala Leu Gly Thr Thr Glu Cys
            100                 105                 110

Leu Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Gln
        115                 120                 125

Pro Leu Arg Tyr Pro Glu Leu Val Asn Gly Arg Tyr Ala Ser Arg Trp
    130                 135                 140

Gln Asp Lys Leu Gly Thr Gly Phe Ala Asn Ser Leu Leu His Ser Ile
145                 150                 155                 160

Leu Val Trp His Leu Pro Phe Cys Gly His Tyr Ile Ile Asn His Phe
                165                 170                 175
```

```
Phe Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Gly Asp Ile Ser
            180                 185                 190

Leu Asn Ala Leu Ile Leu Thr Val Ala Thr Ala Val Leu Thr Met Thr
        195                 200                 205

Pro Leu Leu Leu Ile Cys Leu Ser Tyr Ile Phe Ile Leu Ala Ala Ile
    210                 215                 220

Leu Arg Val Pro Ser Ala Ala Gly Arg Ser Lys Ala Phe Ser Thr Cys
225                 230                 235                 240

Ser Ala His Leu Thr Val Val Val Ile Phe Tyr Gly Thr Ile Thr Phe
                245                 250                 255

Met Tyr Leu Lys Pro Lys Asp Gln Asp Pro Ser Val Gly Lys Ile Ile
            260                 265                 270

Thr Leu Leu Tyr Ala Ile Val Ala Pro Ser Leu Asn Ala Phe Ile Tyr
        275                 280                 285

Ser Leu Arg Asn Ser Glu Val Lys Ala Ala Val Thr Ala Leu Leu Trp
    290                 295                 300

Gly Gly Leu Leu Thr Arg Lys Met Ser His Phe
305                 310                 315
```

<210> 46
<211> 318
<212> PRT
<213> Mus musculus

<400> 46

```
Met Asp Val Ser Asn Gln Thr Thr Val Thr Glu Phe Val Leu Leu Gly
  1               5                  10                  15

Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile Leu
             20                  25                  30

Ser Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu Val
         35                  40                  45

Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu Gly
     50                  55                  60

Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro Leu
 65                  70                  75                  80

Val Leu Asp Gly Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser Gly
                 85                  90                  95

Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu Cys
            100                 105                 110

Val Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Asn
```

```
        115                 120                 125

Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro Met
    130                 135                 140

Ala Val Ser Ser Trp Val Ala Gly Gly Ala Asn Ser Leu Val Gln Ile
145                 150                 155                 160

Ser Leu Ala Val Gln Leu Pro Phe Cys Gly Asp Asn Val Ile Asn His
                165                 170                 175

Phe Ile Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp Ile
            180                 185                 190

Ser Ile Asn Val Ile Ser Met Gly Val Ala Asn Val Ile Phe Leu Gly
        195                 200                 205

Val Pro Val Leu Phe Ile Phe Val Ser Tyr Ile Phe Ile Leu Ser Thr
    210                 215                 220

Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ser Ala His Leu Thr Val Val Ile Ile Phe Tyr Gly Thr Ile Leu
                245                 250                 255

Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp Lys
            260                 265                 270

Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Leu Leu Thr
        275                 280                 285

Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys
    290                 295                 300

Ala Ala Val Arg Asn Leu Ala Ser His Arg Cys Leu Thr Phe
305                 310                 315


<210> 47
<211> 318
<212> PRT
<213> Mus musculus

<400> 47
Met Glu Gly Ala Asn Gln Ser Thr Val Ala Glu Phe Val Leu Leu Gly
  1               5                  10                  15

Leu Ser Asp His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile Leu
             20                  25                  30

Leu Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu Val
         35                  40                  45

Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu Gly
     50                  55                  60
```

```
Asp Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Ile Pro Leu
 65                  70                  75                  80

Val Leu Asp Gly Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser Gly
                85                  90                  95

Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu Cys
            100                 105                 110

Val Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Asn
        115                 120                 125

Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ser Ala Tyr Val Pro Met
    130                 135                 140

Ala Val Ser Ser Trp Val Ala Gly Gly Ala Asn Ser Leu Val Gln Ile
145                 150                 155                 160

Ser Leu Ala Val Gln Leu Pro Phe Cys Gly Asp Asn Val Ile Asn His
                165                 170                 175

Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp Ile
            180                 185                 190

Ser Ile Asn Val Ile Ser Met Gly Val Ala Asn Val Ile Phe Leu Gly
        195                 200                 205

Val Pro Val Leu Phe Ile Phe Val Ser Tyr Ile Phe Ile Leu Ser Thr
    210                 215                 220

Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile Leu
                245                 250                 255

Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp Lys
            260                 265                 270

Gln Asp Val Ser Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Leu Thr
        275                 280                 285

Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys
    290                 295                 300

Ala Ala Val Arg Asn Leu Val Gly Gln Lys Cys Leu Ile Gln
305                 310                 315


<210> 48
<211> 319
<212> PRT
<213> Mus musculus

<400> 48
Met Asp Arg Ser Asn Glu Thr Ala Pro Leu Ser Gly Phe Ile Leu Leu
  1               5                  10                  15
```

```
Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile
            20                  25                  30

Leu Met Met Tyr Leu Val Ile Leu Leu Gly Asn Gly Val Leu Ile Leu
        35                  40                  45

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
    50                  55                  60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro
65                  70                  75                  80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser
                85                  90                  95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu
            100                 105                 110

Cys Val Leu Leu Ser Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Asn Pro Leu Arg Tyr Pro Val Val Met Asn Lys Ala Ala Tyr Val Pro
    130                 135                 140

Met Ala Ala Ser Ser Trp Ala Gly Gly Ile Thr Asn Ser Val Val Gln
145                 150                 155                 160

Thr Ser Leu Ala Met Arg Leu Pro Phe Cys Gly Asp Asn Val Ile Asn
                165                 170                 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp
            180                 185                 190

Ile Ser Ile Asn Val Ile Ser Met Val Val Ala Asn Met Ile Phe Leu
        195                 200                 205

Ala Val Pro Val Leu Phe Ile Phe Val Ser Tyr Val Phe Ile Leu Val
    210                 215                 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
                245                 250                 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp
            260                 265                 270

Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val
        275                 280                 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
    290                 295                 300

Arg Ala Ala Val Arg Asn Leu Val Gly Gln Lys His Leu Thr Glu
305                 310                 315
```

<210> 49
<211> 319
<212> PRT
<213> Mus musculus

<400> 49
Met Glu Arg Ser Asn Lys Thr Thr Pro Val Ser Ser Phe Ile Leu Leu
1 5 10 15

Gly Leu Ser Ala His Pro Lys Leu Glu Lys Thr Phe Phe Val Leu Ile
20 25 30

Leu Leu Met Tyr Leu Val Ile Leu Leu Gly Asn Val Val Leu Ile Leu
35 40 45

Val Ser Ile Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu
50 55 60

Gly Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Val Pro
65 70 75 80

Leu Ile Leu Asp Ser Phe Leu Thr Pro Arg Lys Thr Ile Ser Phe Ser
85 90 95

Gly Cys Ala Val Gln Met Phe Leu Ser Phe Ala Met Gly Ala Thr Glu
100 105 110

Cys Val Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
115 120 125

Asn Pro Leu Arg Tyr Pro Val Val Met Ser Lys Ala Ala Tyr Val Pro
130 135 140

Met Ala Ala Gly Ser Trp Val Ser Gly Ser Ile Thr Ala Thr Val Gln
145 150 155 160

Ile Ser Leu Ala Met Thr Leu Pro Phe Cys Gly Asp Asn Val Ile Asn
165 170 175

His Phe Thr Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ala Asp
180 185 190

Ile Ser Ile Asn Val Ile Ser Met Ala Val Ala Asn Ala Met Phe Leu
195 200 205

Gly Val Pro Val Leu Phe Ile Phe Val Ser Tyr Ile Phe Ile Leu Ser
210 215 220

Thr Ile Leu Arg Ile Pro Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser
225 230 235 240

Thr Cys Ser Ala His Leu Thr Val Val Leu Val Phe Tyr Gly Thr Ile
245 250 255

Leu Phe Met Tyr Gly Lys Pro Lys Ser Lys Asp Pro Leu Gly Ala Asp

```
            260                 265                 270

Lys Gln Asp Leu Ala Asp Lys Leu Ile Ser Leu Phe Tyr Gly Val Val
        275                 280                 285

Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val
    290                 295                 300

Lys Ala Ala Val Thr Asn Leu Val Gly Gln Lys His Phe Lys Trp
305                 310                 315
```

<210> 50
<211> 766
<212> DNA
<213> Homo sapiens

<400> 50
gtcagcctcc aatatcacct taacacatcc aactgccttc ttgttggtgg ggattccagg 60
cctggaacac ctgcacatct ggatctccat ccctttctgc ttagcatgta cactggccct 120
gcttggaaac tgcactctcc ttctcatcat ccaggctgat gcagccctcc atgaacccat 180
gtacctcttt ctggccatgt tggcagccat cgacctggtc ctttcctcct cagcactgcc 240
caagatgctt gccatattct ggttcaggga tcgggagata aacttctttg cctgtctggc 300
ccagatgttc ttccttcact ccttctccat catggagtca gcagtgctgc tggccatggc 360
ctttgaccgc tatgtggcta tctgcaagcc actgcactac accaaggtcc tgactgggtc 420
cctcatcacc aagattttta ttgtggtgtt ggacctgctc cttgttatcc tgtcttatat 480
ctttattctt caggcagttc tactgcttgc ctctcaggag gcccgctaca aggcatttgg 540
gacatgtgtc tctcatatag gtgccatctt agccttctac acaactgtgg tcatctcttc 600
agtcatgcac cgtgtagccc gccatgctgc ccctcatgtc cacatcctcc ttaccaattt 660
ctatctgctc ttcccaccca tggtcaatcc cataatctat ggtgtcaaga ccaagcaaat 720
ccgtgagagc atcttgggag tattcccaag aaaggatatg tagagg 766

<210> 51
<211> 253
<212> PRT
<213> Homo sapiens

<400> 51
```
Ser Ala Ser Asn Ile Thr Leu Thr His Pro Thr Ala Phe Leu Leu Val
  1               5                  10                  15

Gly Ile Pro Gly Leu Glu His Leu His Ile Trp Ile Ser Ile Pro Phe
             20                  25                  30

Cys Leu Ala Cys Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu Leu
         35                  40                  45

Ile Ile Gln Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe Leu
     50                  55                  60

Ala Met Leu Ala Ala Ile Asp Leu Val Leu Ser Ser Ser Ala Leu Pro
 65                  70                  75                  80

Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Arg Glu Ile Asn Phe Phe
                 85                  90                  95
```

```
Ala Cys Leu Ala Gln Met Phe Phe Leu His Ser Phe Ser Ile Met Glu
            100                 105                 110

Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Lys Pro Leu His Tyr Thr Lys Val Leu Thr Gly Ser Leu Ile Thr Lys
    130                 135                 140

Ile Phe Ile Val Val Leu Asp Leu Leu Leu Val Ile Leu Ser Tyr Ile
145                 150                 155                 160

Phe Ile Leu Gln Ala Val Leu Leu Leu Ala Ser Gln Glu Ala Arg Tyr
                165                 170                 175

Lys Ala Phe Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ala Phe
            180                 185                 190

Tyr Thr Thr Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His
        195                 200                 205

Ala Ala Pro His Val His Ile Leu Leu Thr Asn Phe Tyr Leu Leu Phe
    210                 215                 220

Pro Pro Met Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile
225                 230                 235                 240

Arg Glu Ser Ile Leu Gly Val Phe Pro Arg Lys Asp Met
                245                 250
```

<210> 52
<211> 321
<212> PRT
<213> Mus musculus

<400> 52

```
Met Asn Ser Lys Ala Ser Met Leu Gly Thr Asn Phe Thr Ile Ile His
  1               5                  10                  15

Pro Thr Val Phe Ile Leu Leu Gly Ile Pro Gly Leu Glu Gln Tyr His
             20                  25                  30

Thr Trp Leu Ser Ile Pro Phe Cys Leu Met Tyr Ile Ala Ala Val Leu
         35                  40                  45

Gly Asn Gly Ala Leu Ile Leu Val Val Leu Ser Glu Arg Thr Leu His
     50                  55                  60

Glu Pro Met Tyr Val Phe Leu Ser Met Leu Ala Gly Thr Asp Ile Leu
 65                  70                  75                  80

Leu Ser Thr Thr Thr Val Pro Lys Thr Leu Ala Ile Phe Trp Phe His
                 85                  90                  95

Ala Gly Glu Ile Pro Phe Asp Ala Cys Ile Ala Gln Met Phe Phe Ile
            100                 105                 110
```

```
His Val Ala Phe Val Ala Glu Ser Gly Ile Leu Leu Ala Met Ala Phe
        115                 120                 125

Asp Arg Tyr Val Ala Ile Cys Thr Pro Leu Arg Tyr Ser Ala Val Leu
    130                 135                 140

Thr Pro Met Ala Ile Gly Lys Met Thr Leu Ala Ile Trp Gly Arg Ser
145                 150                 155                 160

Ile Gly Thr Ile Phe Pro Ile Ile Phe Leu Leu Lys Arg Leu Ser Tyr
                165                 170                 175

Cys Arg Thr Asn Val Ile Pro His Ser Tyr Cys Glu His Ile Gly Val
            180                 185                 190

Ala Arg Leu Ala Cys Ala Asp Ile Thr Val Asn Ile Trp Tyr Gly Phe
        195                 200                 205

Ser Val Pro Met Ala Ser Val Leu Val Asp Val Ala Leu Ile Gly Ile
    210                 215                 220

Ser Tyr Thr Leu Ile Leu Gln Ala Val Phe Arg Leu Pro Ser Gln Asp
225                 230                 235                 240

Ala Arg His Lys Ala Leu Asn Thr Cys Gly Ser His Ile Gly Val Ile
                245                 250                 255

Leu Leu Phe Phe Ile Pro Ser Phe Phe Thr Phe Leu Thr His Arg Phe
            260                 265                 270

Gly Lys Asn Ile Pro His His Val His Ile Leu Leu Ala Asn Leu Tyr
        275                 280                 285

Val Leu Val Pro Pro Met Leu Asn Pro Ile Ile Tyr Gly Ala Lys Thr
    290                 295                 300

Lys Gln Ile Arg Asp Ser Met Thr Arg Met Leu Ser Val Val Trp Lys
305                 310                 315                 320

Ser
```

<210> 53
<211> 320
<212> PRT
<213> Rattus norvegicus

<400> 53

```
Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Met Leu Ile Gly Ile
  1               5                  10                  15

Pro Gly Leu Glu Glu Ala His Phe Trp Phe Gly Phe Pro Leu Leu Ser
             20                  25                  30

Met Tyr Ala Val Ala Leu Phe Gly Asn Cys Ile Val Val Phe Ile Val
```

```
         35                  40                  45

Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met
     50                  55                  60

Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile
 65                  70                  75                  80

Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Thr Phe Asp Ala Cys
                 85                  90                  95

Leu Ala Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr
            100                 105                 110

Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro
        115                 120                 125

Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Val Gln Ile Gly
    130                 135                 140

Met Val Ala Leu Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu
145                 150                 155                 160

Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser
                165                 170                 175

Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Thr Asp Thr Leu
            180                 185                 190

Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val
        195                 200                 205

Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Ala Val
    210                 215                 220

Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys
225                 230                 235                 240

Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly
                245                 250                 255

Leu Ser Val Val His Arg Phe Gly Asn Ser Leu Asp Pro Ile Val His
            260                 265                 270

Val Leu Met Gly Asp Val Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro
        275                 280                 285

Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala
    290                 295                 300

Met Phe Lys Ile Ser Cys Asp Lys Asp Ile Glu Ala Gly Gly Asn Thr
305                 310                 315                 320
```

<210> 54
<211> 326
<212> PRT
<213> Mus musculus

<400> 54
Met Lys Val Ala Ser Ser Phe His Asn Asp Thr Asn Pro Gln Asp Val
1 5 10 15

Trp Tyr Val Leu Ile Gly Ile Pro Gly Leu Glu Asp Leu His Ser Trp
20 25 30

Ile Ala Ile Pro Ile Cys Ser Met Tyr Ile Val Ala Val Ile Gly Asn
35 40 45

Val Leu Leu Ile Phe Leu Ile Val Thr Glu Arg Ser Leu His Glu Pro
50 55 60

Met Tyr Phe Phe Leu Ser Met Leu Ala Leu Ala Asp Leu Leu Leu Ser
65 70 75 80

Thr Ala Thr Ala Pro Lys Met Leu Ala Ile Phe Trp Phe His Ser Arg
85 90 95

Gly Ile Ser Phe Gly Ser Cys Val Ser Gln Met Phe Phe Ile His Phe
100 105 110

Ile Phe Val Ala Glu Ser Ala Ile Leu Leu Ala Met Ala Phe Asp Arg
115 120 125

Tyr Val Ala Ile Cys Tyr Pro Leu Arg Tyr Thr Thr Ile Leu Thr Ser
130 135 140

Ser Val Ile Gly Lys Ile Gly Thr Ala Ala Val Val Arg Ser Phe Leu
145 150 155 160

Ile Cys Phe Pro Phe Ile Phe Leu Val Tyr Arg Leu Leu Tyr Cys Gly
165 170 175

Lys His Ile Ile Pro His Ser Tyr Cys Glu His Met Gly Ile Ala Arg
180 185 190

Leu Ala Cys Asp Asn Ile Thr Val Asn Ile Ile Tyr Gly Leu Thr Met
195 200 205

Ala Leu Leu Ser Thr Gly Leu Asp Ile Leu Leu Ile Ile Ile Ser Tyr
210 215 220

Thr Met Ile Leu Arg Thr Val Phe Gln Ile Pro Ser Trp Ala Ala Arg
225 230 235 240

Tyr Lys Ala Leu Asn Thr Cys Gly Ser His Ile Cys Val Ile Leu Leu
245 250 255

Phe Tyr Thr Pro Ala Phe Phe Ser Phe Phe Ala His Arg Phe Gly Gly
260 265 270

```
Lys Thr Val Pro Arg His Ile His Ile Leu Val Ala Asn Leu Tyr Val
        275                 280                 285

Val Val Pro Pro Met Leu Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys
    290                 295                 300

Gln Ile Gln Asp Arg Val Val Phe Leu Phe Ser Ser Val Ser Thr Cys
305                 310                 315                 320

Gln His Asp Ser Arg Cys
                325
```

<210> 55
<211> 320
<212> PRT
<213> Homo sapiens

<400> 55

```
Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Val Leu Ile Gly Ile
  1               5                  10                  15

Pro Gly Leu Glu Lys Ala His Phe Trp Val Gly Phe Pro Leu Leu Ser
             20                  25                  30

Met Tyr Val Val Ala Met Phe Gly Asn Cys Ile Val Val Phe Ile Val
         35                  40                  45

Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met
     50                  55                  60

Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile
 65                  70                  75                  80

Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Ser Phe Glu Ala Cys
                85                  90                  95

Leu Thr Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr
            100                 105                 110

Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro
        115                 120                 125

Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Ala Gln Ile Gly
    130                 135                 140

Ile Val Ala Val Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu
145                 150                 155                 160

Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser
                165                 170                 175

Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Ala Asp Thr Leu
            180                 185                 190

Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val
        195                 200                 205
```

```
Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Thr Val
    210                 215                 220

Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys
225                 230                 235                 240

Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly
                245                 250                 255

Leu Ser Val Val His Arg Phe Gly Asn Ser Leu His Pro Ile Val Arg
            260                 265                 270

Val Val Met Gly Asp Ile Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro
        275                 280                 285

Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala
    290                 295                 300

Met Phe Lys Ile Ser Cys Asp Lys Asp Leu Gln Ala Val Gly Gly Lys
305                 310                 315                 320
```

<210> 56
<211> 318
<212> PRT
<213> Homo sapiens

<400> 56

```
Met Ser Asp Ser Asn Leu Ser Asp Asn His Leu Pro Asp Thr Phe Phe
  1               5                  10                  15

Leu Thr Gly Ile Pro Gly Leu Glu Ala Ala His Phe Trp Ile Ala Ile
             20                  25                  30

Pro Phe Cys Ala Met Tyr Leu Val Ala Leu Val Gly Asn Ala Ala Leu
         35                  40                  45

Ile Leu Val Ile Ala Met Asp Asn Ala Leu His Ala Pro Met Tyr Leu
     50                  55                  60

Phe Leu Cys Leu Leu Ser Leu Thr Asp Leu Ala Leu Ser Ser Thr Thr
 65                  70                  75                  80

Val Pro Lys Met Leu Ala Ile Leu Trp Leu His Ala Gly Glu Ile Ser
                 85                  90                  95

Phe Gly Gly Cys Leu Ala Gln Met Phe Cys Val His Ser Ile Tyr Ala
            100                 105                 110

Leu Glu Ser Ser Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala
        115                 120                 125

Ile Cys Asn Pro Leu Arg Tyr Thr Thr Ile Leu Asn His Ala Val Ile
```

```
    130                 135                 140

Gly Arg Ile Gly Phe Val Gly Leu Phe Arg Ser Val Ala Ile Val Ser
145                 150                 155                 160

Pro Phe Ile Phe Leu Leu Arg Arg Leu Pro Tyr Cys Gly His Arg Val
                165                 170                 175

Met Thr His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys
            180                 185                 190

Ala Asn Ile Thr Val Asn Ile Val Tyr Gly Leu Thr Val Ala Leu Leu
        195                 200                 205

Ala Met Gly Leu Asp Ser Ile Leu Ile Ala Ile Ser Tyr Gly Phe Ile
    210                 215                 220

Leu His Ala Val Phe His Leu Pro Ser His Asp Ala Gln His Lys Ala
225                 230                 235                 240

Leu Ser Thr Cys Gly Ser His Ile Gly Ile Ile Leu Val Phe Tyr Ile
                245                 250                 255

Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His His Glu Val
            260                 265                 270

Pro Lys His Val His Ile Phe Leu Ala Asn Leu Tyr Val Leu Val Pro
        275                 280                 285

Pro Val Leu Asn Pro Ile Leu Tyr Gly Ala Arg Thr Lys Glu Ile Arg
    290                 295                 300

Ser Arg Leu Leu Lys Leu Leu His Leu Gly Lys Thr Ser Ile
305                 310                 315
```

<210> 57
<211> 1000
<212> DNA
<213> Homo sapiens

<400> 57

```
ccatggaggc tgccaatgag tcttcagagg gaatctcatt cgttttattg ggactgacaa 60
caagtcctgg acagcagcgg cctctctttg tgctgttctt gctcttgtat gtggccagcc 120
tcctgggcaa tggactcatt gtggctgcca tccaggccag tccagccctt catgcaccca 180
tgtacttcct gctggcccac ctgtcctttg ctgacctctg cttcgcctcc gtcactgtgc 240
ccaagatgtt ggccaacttg ttggcccatg accactccat ctcgctggct ggctgcctga 300
cccaaatgta cttcttcttt gccctggggg taactgatag ctgtcttctg gcggccatgg 360
cctatgactg ctacgtggcc atccggcacc ccctccccta tgccacgagg atgtcccggg 420
ccatgtgcgc agccctggtg ggaatggcat ggctggtgtc ccacgtccac tccctcctgt 480
atatcctgct catggctcgc ttgtccttct gtgcttccca ccaagtgccc cacttcttct 540
gtgaccacca gcctctctta aggctctcgt gctctgacac ccaccacatc cagctgctca 600
tcttcaccga gggcgccgca gtggtggtca ctcccttcct gctcatcctc gcctcctatg 660
gggccatcgc agctgccgtg ctccagctgc cctcagcctc tgggaggctc cgggctgtgt 720
ccacctgtgg ctcccacctg gctgtggtga gcctcttcta tgggacagtc attgcagtct 780
acttccaggc cacatcccga cgcgaggcag agtggggccg tgtggccact gtcatgtaca 840
ctgtagtcac ccccatgctg aaccccatca tctacagcct ctggaatcgc gatgtacagg 900
```

gggcactccg agcccttctc attgggcgaa ggatctcagc tagtgactcc tgagggcagg 960
accccactga ggacagactg catcacccac actggcaact 1000

<210> 58
<211> 316
<212> PRT
<213> Homo sapiens

<400> 58
Met Glu Ala Ala Asn Glu Ser Ser Glu Gly Ile Ser Phe Val Leu Leu
1 5 10 15

Gly Leu Thr Thr Ser Pro Gly Gln Gln Arg Pro Leu Phe Val Leu Phe
20 25 30

Leu Leu Leu Tyr Val Ala Ser Leu Leu Gly Asn Gly Leu Ile Val Ala
35 40 45

Ala Ile Gln Ala Ser Pro Ala Leu His Ala Pro Met Tyr Phe Leu Leu
50 55 60

Ala His Leu Ser Phe Ala Asp Leu Cys Phe Ala Ser Val Thr Val Pro
65 70 75 80

Lys Met Leu Ala Asn Leu Leu Ala His Asp His Ser Ile Ser Leu Ala
85 90 95

Gly Cys Leu Thr Gln Met Tyr Phe Phe Phe Ala Leu Gly Val Thr Asp
100 105 110

Ser Cys Leu Leu Ala Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Arg
115 120 125

His Pro Leu Pro Tyr Ala Thr Arg Met Ser Arg Ala Met Cys Ala Ala
130 135 140

Leu Val Gly Met Ala Trp Leu Val Ser His Val His Ser Leu Leu Tyr
145 150 155 160

Ile Leu Leu Met Ala Arg Leu Ser Phe Cys Ala Ser His Gln Val Pro
165 170 175

His Phe Phe Cys Asp His Gln Pro Leu Leu Arg Leu Ser Cys Ser Asp
180 185 190

Thr His His Ile Gln Leu Leu Ile Phe Thr Glu Gly Ala Ala Val Val
195 200 205

Val Thr Pro Phe Leu Leu Ile Leu Ala Ser Tyr Gly Ala Ile Ala Ala
210 215 220

Ala Val Leu Gln Leu Pro Ser Ala Ser Gly Arg Leu Arg Ala Val Ser
225 230 235 240

Thr Cys Gly Ser His Leu Ala Val Val Ser Leu Phe Tyr Gly Thr Val
245 250 255

```
Ile Ala Val Tyr Phe Gln Ala Thr Ser Arg Arg Glu Ala Glu Trp Gly
            260                 265                 270

Arg Val Ala Thr Val Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Trp Asn Arg Asp Val Gln Gly Ala Leu Arg Ala
    290                 295                 300

Leu Leu Ile Gly Arg Arg Ile Ser Ala Ser Asp Ser
305                 310                 315
```

<210> 59
<211> 991
<212> DNA
<213> Homo sapiens

<400> 59
```
ccatggaggc tgccaatgag tcttcagagg gaatctcatt cgttttattg ggactgacaa 60
caagtcctgg acagcagcgg cctctctttg tgctgttctt gctcttgtat gtggccagcc 120
tcctgggtaa tggactcatt gtggctgcca tccaggccag tccagccctt catgcaccca 180
tgtacttcct gctggcccac ctgtcctttg ctgacctctg cttcgcctcc gtcactgtgc 240
ccaagatgtt ggccaacttg ttggcccatg accactccat ctcgctggct ggctgcctga 300
cccaaatgta cttcttcttt gccctggggg taactgatag ctgtcttctg gcggccatgg 360
cctatgactg ctacgtggcc atccggcacc ccctccccta tgccacgagg atgtcccggg 420
ccatgtgcgc agccctggtg ggaatggcat ggctggtgtc ccacgtccac tccctcctgt 480
atatcctgct catggctcgc ttgtccttct gtgcttccca ccaagtgccc cacttcttct 540
gtgaccacca gcctctctta aggctctcgt gctctgacac ccaccacatc cagctgctca 600
tcttcaccga gggcgccgca gtggtggtca ctcccttcct gctcatcctc gcctcctatg 660
gggccatcgc agctgccgtg ctccagctgc cctcagcctc tgggaggctc cgggctgtgt 720
ccacctgtgg ctcccacctg gctgtggtga gcctcttcta tgggacagtc attgcagtct 780
acttccaggc cacatcccga cgcgaggcag agtggggccg tgtggccact gtcatgtaca 840
ctgtagtcac ccccatgctg aaccccatca tctacagcct ctggaatcgc gatgtacagg 900
gggcactccg agcccttctc attgggcgaa ggatctcagc tagtgactcc tgagggcagg 960
accccactga ggacagactg catcacccac a                                991
```

<210> 60
<211> 316
<212> PRT
<213> Homo sapiens

<400> 60
```
Met Glu Ala Ala Asn Glu Ser Ser Glu Gly Ile Ser Phe Val Leu Leu
  1               5                  10                  15

Gly Leu Thr Thr Ser Pro Gly Gln Gln Arg Pro Leu Phe Val Leu Phe
             20                  25                  30

Leu Leu Leu Tyr Val Ala Ser Leu Leu Gly Asn Gly Leu Ile Val Ala
         35                  40                  45

Ala Ile Gln Ala Ser Pro Ala Leu His Ala Pro Met Tyr Phe Leu Leu
     50                  55                  60
```

```
Ala His Leu Ser Phe Ala Asp Leu Cys Phe Ala Ser Val Thr Val Pro
 65                  70                  75                  80

Lys Met Leu Ala Asn Leu Leu Ala His Asp His Ser Ile Ser Leu Ala
                 85                  90                  95

Gly Cys Leu Thr Gln Met Tyr Phe Phe Phe Ala Leu Gly Val Thr Asp
            100                 105                 110

Ser Cys Leu Leu Ala Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Arg
        115                 120                 125

His Pro Leu Pro Tyr Ala Thr Arg Met Ser Arg Ala Met Cys Ala Ala
    130                 135                 140

Leu Val Gly Met Ala Trp Leu Val Ser His Val His Ser Leu Leu Tyr
145                 150                 155                 160

Ile Leu Leu Met Ala Arg Leu Ser Phe Cys Ala Ser His Gln Val Pro
                165                 170                 175

His Phe Phe Cys Asp His Gln Pro Leu Leu Arg Leu Ser Cys Ser Asp
            180                 185                 190

Thr His His Ile Gln Leu Leu Ile Phe Thr Glu Gly Ala Ala Val Val
        195                 200                 205

Val Thr Pro Phe Leu Leu Ile Leu Ala Ser Tyr Gly Ala Ile Ala Ala
    210                 215                 220

Ala Val Leu Gln Leu Pro Ser Ala Ser Gly Arg Leu Arg Ala Val Ser
225                 230                 235                 240

Thr Cys Gly Ser His Leu Ala Val Val Ser Leu Phe Tyr Gly Thr Val
                245                 250                 255

Ile Ala Val Tyr Phe Gln Ala Thr Ser Arg Arg Glu Ala Glu Trp Gly
            260                 265                 270

Arg Val Ala Thr Val Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Trp Asn Arg Asp Val Gln Gly Ala Leu Arg Ala
    290                 295                 300

Leu Leu Ile Gly Arg Arg Ile Ser Ala Ser Asp Ser
305                 310                 315
```

<210> 61
<211> 216
<212> PRT
<213> Homo sapiens

<400> 61

```
Phe Ala Asp Leu Cys Phe Ala Ser Val Thr Val Pro Lys Met Leu Ala
  1               5                  10                  15
```

```
Asn Leu Leu Ala His Asp His Ser Ile Ser Leu Ala Gly Cys Leu Thr
             20                  25                  30

Gln Met Tyr Phe Phe Phe Ala Leu Gly Val Thr Asp Ser Cys Leu Leu
         35                  40                  45

Ala Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Arg His Pro Leu Pro
     50                  55                  60

Tyr Ala Thr Arg Met Ser Arg Ala Met Cys Ala Ala Leu Val Gly Met
 65                  70                  75                  80

Ala Trp Leu Val Ser His Val His Ser Leu Leu Tyr Ile Leu Leu Met
                 85                  90                  95

Ala Arg Leu Ser Phe Cys Ala Ser His Gln Val Pro His Phe Phe Cys
            100                 105                 110

Asp His Gln Pro Leu Leu Arg Leu Ser Cys Ser Asp Thr His His Ile
        115                 120                 125

Gln Leu Leu Ile Phe Thr Glu Gly Ala Ala Val Val Val Thr Pro Phe
    130                 135                 140

Leu Leu Ile Leu Ala Ser Tyr Gly Ala Ile Ala Ala Ala Val Leu Gln
145                 150                 155                 160

Leu Pro Ser Ala Ser Gly Arg Leu Arg Ala Val Ser Thr Cys Gly Ser
                165                 170                 175

His Leu Ala Val Val Ser Leu Phe Tyr Gly Thr Val Ile Ala Val Tyr
            180                 185                 190

Phe Gln Ala Thr Ser Arg Arg Glu Ala Glu Trp Gly Arg Val Ala Thr
        195                 200                 205

Val Met Tyr Thr Val Val Thr Pro
    210                 215


<210> 62
<211> 299
<212> PRT
<213> Rattus norvegicus

<400> 62
Met Ser Ser Thr Asn Gln Ser Ser Val Thr Glu Phe Leu Leu Leu Gly
  1               5                  10                  15

Leu Ser Arg Gln Pro Gln Gln Gln Gln Leu Leu Phe Leu Leu Phe Leu
             20                  25                  30

Ile Met Tyr Leu Ala Thr Val Leu Gly Asn Leu Leu Ile Ile Leu Ala
         35                  40                  45

Ile Gly Thr Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser
```

```
     50                  55                  60

Asn Leu Ser Phe Val Asp Val Cys Phe Ser Ser Thr Thr Val Pro Lys
 65                  70                  75                  80

Val Leu Ala Asn His Ile Leu Gly Ser Gln Ala Ile Ser Phe Ser Gly
                 85                  90                  95

Cys Leu Thr Gln Leu Tyr Phe Leu Ala Val Phe Gly Asn Met Asp Asn
            100                 105                 110

Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Phe Val Ala Ile Cys His
        115                 120                 125

Pro Leu His Tyr Thr Thr Lys Met Thr Arg Gln Leu Cys Val Leu Leu
    130                 135                 140

Val Val Gly Ser Trp Val Val Ala Asn Met Asn Cys Leu Leu His Ile
145                 150                 155                 160

Leu Leu Met Ala Arg Leu Ser Phe Cys Ala Asp Asn Met Ile Pro His
                165                 170                 175

Phe Phe Cys Asp Gly Thr Pro Leu Leu Lys Leu Ser Cys Ser Asp Thr
            180                 185                 190

His Leu Asn Glu Leu Met Ile Leu Thr Glu Gly Ala Val Val Met Val
        195                 200                 205

Thr Pro Phe Val Cys Ile Leu Ile Ser Tyr Ile His Ile Thr Cys Ala
    210                 215                 220

Val Leu Arg Val Ser Ser Pro Arg Gly Gly Trp Lys Ser Phe Ser Thr
225                 230                 235                 240

Cys Gly Ser His Leu Ala Val Val Cys Leu Phe Tyr Gly Thr Val Ile
                245                 250                 255

Ala Val Tyr Phe Asn Pro Ser Ser Ser His Leu Ala Gly Arg Asp Met
            260                 265                 270

Ala Ala Ala Val Met Tyr Ala Val Val Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Ser Asp Met Lys Ala
    290                 295


<210> 63
<211> 313
<212> PRT
<213> Rattus norvegicus

<400> 63
Met Ser Ser Thr Asn Gln Ser Ser Val Thr Glu Phe Leu Leu Leu Gly
  1               5                  10                  15
```

```
Leu Ser Arg Gln Pro Gln Gln Gln Gln Leu Leu Phe Leu Leu Phe Leu
            20                  25                  30

Ile Met Tyr Leu Ala Thr Val Leu Gly Asn Leu Leu Ile Ile Leu Ala
        35                  40                  45

Ile Gly Thr Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser
    50                  55                  60

Asn Leu Ser Phe Val Asp Val Cys Phe Ser Ser Thr Thr Val Pro Lys
65                  70                  75                  80

Val Leu Ala Asn His Ile Leu Gly Ser Gln Ala Ile Ser Phe Ser Gly
                85                  90                  95

Cys Leu Thr Gln Leu Tyr Phe Leu Ala Val Phe Gly Asn Met Asp Asn
            100                 105                 110

Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Phe Val Ala Ile Cys His
        115                 120                 125

Pro Leu His Tyr Thr Thr Lys Met Thr Arg Gln Leu Cys Val Leu Leu
    130                 135                 140

Val Val Gly Ser Trp Val Val Ala Asn Met Asn Cys Leu Leu His Ile
145                 150                 155                 160

Leu Leu Met Ala Arg Lys Ser Phe Cys Ala Asp Asn Met Ile Pro His
                165                 170                 175

Phe Phe Cys Asp Gly Thr Pro Leu Leu Lys Leu Ser Cys Ser Asp Thr
            180                 185                 190

His Leu Asn Glu Leu Met Ile Leu Thr Glu Gly Ala Val Val Met Val
        195                 200                 205

Thr Pro Phe Val Cys Ile Leu Ile Ser Tyr Ile His Ile Thr Cys Ala
    210                 215                 220

Val Leu Arg Val Ser Ser Pro Arg Gly Gly Trp Lys Ser Phe Ser Thr
225                 230                 235                 240

Cys Gly Ser His Leu Ala Val Val Cys Leu Phe Tyr Gly Thr Val Ile
                245                 250                 255

Ala Val Tyr Phe Asn Pro Ser Ser Ser His Leu Ala Gly Arg Asp Met
            260                 265                 270

Ala Ala Ala Val Met Tyr Ala Val Val Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Ser Asp Met Lys Ala Ala Leu Arg Lys Val
    290                 295                 300

Leu Ala Met Arg Phe Pro Ser Lys Gln
305                 310
```

<210> 64
<211> 312
<212> PRT
<213> Homo sapiens

<400> 64
Met Ser Gly Thr Asn Gln Ser Ser Val Ser Glu Phe Leu Leu Leu Gly
1 5 10 15

Leu Ser Arg Gln Pro Gln Gln Gln His Leu Leu Phe Val Phe Phe Leu
20 25 30

Ser Met Tyr Leu Ala Thr Val Leu Gly Asn Leu Leu Ile Ile Leu Ser
35 40 45

Val Ser Ile Asp Ser Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser
50 55 60

Asn Leu Ser Phe Val Asp Ile Cys Phe Ser Phe Thr Thr Val Pro Lys
65 70 75 80

Met Leu Ala Asn His Ile Leu Glu Thr Gln Thr Ile Ser Phe Cys Gly
85 90 95

Cys Leu Thr Gln Met Tyr Phe Val Phe Met Phe Val Asp Met Asp Asn
100 105 110

Phe Leu Leu Ala Val Met Ala Tyr Asp His Phe Val Ala Val Cys His
115 120 125

Pro Leu His Tyr Thr Ala Lys Met Thr His Gln Leu Cys Ala Leu Leu
130 135 140

Val Ala Gly Leu Trp Val Val Ala Asn Leu Asn Val Leu Leu His Thr
145 150 155 160

Leu Leu Met Ala Pro Leu Ser Phe Cys Ala Asp Asn Ala Ile Thr His
165 170 175

Phe Phe Cys Asp Val Thr Pro Leu Leu Lys Leu Ser Cys Ser Asp Thr
180 185 190

His Leu Asn Glu Val Ile Ile Leu Ser Glu Gly Ala Leu Val Met Ile
195 200 205

Thr Pro Phe Leu Cys Ile Leu Ala Ser Tyr Met His Ile Thr Cys Thr
210 215 220

Val Leu Lys Val Pro Ser Thr Lys Gly Arg Trp Lys Ala Phe Ser Thr
225 230 235 240

Cys Gly Ser His Leu Ala Val Val Leu Leu Phe Tyr Ser Thr Ile Ile
245 250 255

Ala Val Tyr Phe Asn Pro Leu Ser Ser His Ser Ala Glu Lys Asp Thr
260 265 270

```
Met Ala Thr Val Leu Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Arg Tyr Leu Lys Gly Ala Leu Lys Lys Val
    290                 295                 300

Val Gly Arg Val Val Phe Ser Val
305                 310


<210> 65
<211> 314
<212> PRT
<213> Pan troglodytes

<220>
<221> VARIANT
<222> (1)..(314)
<223> Wherein Xaa is any amino acid as defined in the
      specification

<400> 65
Met Met Gly Gln Asn Gln Thr Ser Ile Ser Asp Phe Leu Leu Leu Gly
  1               5                  10                  15

Leu Pro Ile Gln Pro Glu Gln Gln Asn Leu Cys Tyr Ala Leu Phe Leu
             20                  25                  30

Ala Met Tyr Leu Thr Thr Leu Leu Gly Asn Leu Leu Ile Ile Val Leu
         35                  40                  45

Ile Arg Leu Asp Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser
     50                  55                  60

Asn Leu Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Ile Pro Lys
 65                  70                  75                  80

Leu Leu Gln Asn Met Gln Asn Gln Asp Pro Ser Ile Pro Tyr Ala Asp
                 85                  90                  95

Cys Leu Thr Gln Met Tyr Phe Phe Leu Leu Phe Gly Asp Leu Glu Ser
            100                 105                 110

Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe
        115                 120                 125

Pro Leu His Tyr Thr Ala Ile Met Ser Pro Met Leu Cys Leu Ser Leu
    130                 135                 140

Val Ala Leu Ser Trp Val Leu Thr Thr Phe His Ala Met Leu His Thr
145                 150                 155                 160

Leu Leu Met Ala Arg Leu Cys Phe Cys Ala Asp Asn Val Ile Pro His
                165                 170                 175

Phe Phe Cys Asp Met Ser Ala Leu Leu Lys Leu Ala Cys Ser Asp Thr
```

```
            180                 185                 190

Arg Val Asn Glu Trp Val Ile Phe Ile Met Gly Gly Leu Ile Val Val
        195                 200                 205

Ile Pro Phe Leu Leu Ile Leu Gly Ser Tyr Ala Arg Ile Val Ser Ser
    210                 215                 220

Ile Leu Lys Val Pro Ser Ser Lys Gly Ile Cys Lys Ala Phe Ser Thr
225                 230                 235                 240

Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Ile Ile
                245                 250                 255

Gly Leu Tyr Leu Cys Pro Ser Ala Asn Ser Ser Thr Leu Lys Glu Thr
            260                 265                 270

Val Met Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Gly Ala Leu Glu Arg Val
    290                 295                 300

Ile Xaa Lys Arg Lys Asn Pro Phe Leu Leu
305                 310
```

<210> 66
<211> 1022
<212> DNA
<213> Homo sapiens

<400> 66
```
tctctgtttc ctcagggatt gagaaagggg acaatgtggc agaagaatca gacctctctg 60
gcagacttca tccttgaggg gctcttcgat gactccctta cccacctttt ccttttctcc 120
ttgaccatgg tggtcttcct tattgcggtg agtggcaaca ccctcaccat tctcctcatc 180
tgcattgatc cccaacttca tacaccaatg tatttcctgc tcagccagct ctccctcatg 240
gatctgatgc atgtctccac aatcatcctg aagatggcta ccaactacct atctggcaag 300
aaatctatct cctttgtggg ctgtgcaacc cagcacttcc tctatttgtg tctaggtggt 360
gctgaatgtt ttctcttagc tgtcatgtcc tatgaccgct atgttgccat ctgtcatcca 420
ctgcgctatg ctgtgctcat gaacaagaag gtgggactga tgatggctgt catgtcatgg 480
ttgggggcat ccgtgaactc cctaattcac atggcgatct tgatgcactt ccctttctgt 540
gggcctcgga aagtctacca cttctactgt gagttcccag ctgttgtgaa gttggtatgt 600
ggcgacatca ctgtgtatga gaccacagtg tacatcagca gcattctcct cctcctcccc 660
atcttcctga tttctacatc ctatgtcttc atccttcaaa gtgtcattca gatgcgctca 720
tctgggagca agagaaatgc ctttgccact tgtggctccc acctcacggt ggtttctctt 780
tggtttggtg cctgcatctt ctcctacatg agacccaggt cccagtgcac tctattgcag 840
aacaaagttg gttctgtgtt ctacagcatc attacgccca cattgaattc tctgatttat 900
actctccgga ataaagatgt agctaaggct ctgagaagag tgctgaggag agatgttatc 960
acccagtgca ttcaacgact gcaattgtgg ttgccccgag tgtagagtgg aataggataa 1020
gc                                                                  1022
```

<210> 67
<211> 323
<212> PRT
<213> Homo sapiens

<400> 67

```
Met Trp Gln Lys Asn Gln Thr Ser Leu Ala Asp Phe Ile Leu Glu Gly
  1               5                  10                  15

Leu Phe Asp Asp Ser Leu Thr His Leu Phe Leu Phe Ser Leu Thr Met
             20                  25                  30

Val Val Phe Leu Ile Ala Val Ser Gly Asn Thr Leu Thr Ile Leu Leu
         35                  40                  45

Ile Cys Ile Asp Pro Gln Leu His Thr Pro Met Tyr Phe Leu Leu Ser
     50                  55                  60

Gln Leu Ser Leu Met Asp Leu Met His Val Ser Thr Ile Ile Leu Lys
 65                  70                  75                  80

Met Ala Thr Asn Tyr Leu Ser Gly Lys Lys Ser Ile Ser Phe Val Gly
                 85                  90                  95

Cys Ala Thr Gln His Phe Leu Tyr Leu Cys Leu Gly Gly Ala Glu Cys
            100                 105                 110

Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Tyr Val Ala Ile Cys His
        115                 120                 125

Pro Leu Arg Tyr Ala Val Leu Met Asn Lys Lys Val Gly Leu Met Met
    130                 135                 140

Ala Val Met Ser Trp Leu Gly Ala Ser Val Asn Ser Leu Ile His Met
145                 150                 155                 160

Ala Ile Leu Met His Phe Pro Phe Cys Gly Pro Arg Lys Val Tyr His
                165                 170                 175

Phe Tyr Cys Glu Phe Pro Ala Val Val Lys Leu Val Cys Gly Asp Ile
            180                 185                 190

Thr Val Tyr Glu Thr Thr Val Tyr Ile Ser Ser Ile Leu Leu Leu Leu
        195                 200                 205

Pro Ile Phe Leu Ile Ser Thr Ser Tyr Val Phe Ile Leu Gln Ser Val
    210                 215                 220

Ile Gln Met Arg Ser Ser Gly Ser Lys Arg Asn Ala Phe Ala Thr Cys
225                 230                 235                 240

Gly Ser His Leu Thr Val Val Ser Leu Trp Phe Gly Ala Cys Ile Phe
                245                 250                 255

Ser Tyr Met Arg Pro Arg Ser Gln Cys Thr Leu Leu Gln Asn Lys Val
            260                 265                 270

Gly Ser Val Phe Tyr Ser Ile Ile Thr Pro Thr Leu Asn Ser Leu Ile
        275                 280                 285

Tyr Thr Leu Arg Asn Lys Asp Val Ala Lys Ala Leu Arg Arg Val Leu
```

```
    290                 295                 300

Arg Arg Asp Val Ile Thr Gln Cys Ile Gln Arg Leu Gln Leu Trp Leu
305                 310                 315                 320

Pro Arg Val
```

<210> 68
<211> 311
<212> PRT
<213> Homo sapiens

<400> 68

```
Met Glu Glu Tyr Asn Thr Ser Ser Thr Asp Phe Thr Phe Met Gly Leu
  1               5                  10                  15

Phe Asn Arg Lys Glu Thr Ser Gly Leu Ile Phe Ala Ile Ile Ser Ile
             20                  25                  30

Ile Phe Phe Thr Ala Leu Met Ala Asn Gly Val Met Ile Phe Leu Ile
         35                  40                  45

Gln Thr Asp Leu Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ser His
     50                  55                  60

Leu Ser Leu Ile Asp Met Met Tyr Ile Ser Thr Ile Val Pro Lys Met
 65                  70                  75                  80

Leu Val Asn Tyr Leu Leu Asp Gln Arg Thr Ile Ser Phe Val Gly Cys
                 85                  90                  95

Thr Ala Gln His Phe Leu Tyr Leu Thr Leu Val Gly Ala Glu Phe Phe
            100                 105                 110

Leu Leu Gly Leu Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Asn Pro
        115                 120                 125

Leu Arg Tyr Pro Val Leu Met Ser Arg Arg Val Cys Trp Met Ile Ile
    130                 135                 140

Ala Gly Ser Trp Phe Gly Gly Ser Leu Asp Gly Phe Leu Leu Thr Pro
145                 150                 155                 160

Ile Thr Met Ser Phe Pro Phe Cys Asn Ser Arg Glu Ile Asn His Phe
                165                 170                 175

Phe Cys Glu Ala Pro Ala Val Leu Lys Leu Ala Cys Ala Asp Thr Ala
            180                 185                 190

Leu Tyr Glu Thr Val Met Tyr Val Cys Cys Val Leu Met Leu Leu Ile
        195                 200                 205

Pro Phe Ser Val Val Leu Ala Ser Tyr Ala Arg Ile Leu Thr Thr Val
    210                 215                 220
```

```
Gln Cys Met Ser Ser Val Glu Gly Arg Lys Lys Ala Phe Ala Thr Cys
225                 230                 235                 240

Ser Ser His Met Thr Val Val Ser Leu Phe Tyr Gly Ala Ala Met Tyr
                245                 250                 255

Thr Tyr Met Leu Pro His Ser Tyr His Lys Pro Ala Gln Asp Lys Val
            260                 265                 270

Leu Ser Val Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu Ile
        275                 280                 285

Tyr Ser Leu Arg Asn Lys Asp Val Thr Gly Ala Leu Lys Arg Ala Leu
    290                 295                 300

Gly Arg Phe Lys Gly Pro Gln
305                 310
```

<210> 69
<211> 315
<212> PRT
<213> Homo sapiens

<400> 69

```
Met Gly Arg Trp Val Asn Gln Ser Tyr Thr Asp Gly Phe Phe Leu Leu
  1               5                  10                  15

Gly Ile Phe Ser His Ser Gln Thr Asp Leu Val Leu Phe Ser Ala Val
             20                  25                  30

Met Val Val Phe Thr Val Ala Leu Cys Gly Asn Val Leu Leu Ile Phe
         35                  40                  45

Leu Ile Tyr Leu Asp Ala Gly Leu His Thr Pro Met Tyr Phe Phe Leu
     50                  55                  60

Ser Gln Leu Ser Leu Met Asp Leu Met Leu Val Cys Asn Ile Val Pro
 65                  70                  75                  80

Lys Met Ala Ala Asn Phe Leu Ser Gly Arg Lys Ser Ile Ser Phe Val
                 85                  90                  95

Gly Cys Gly Ile Gln Ile Gly Phe Phe Val Ser Leu Val Gly Ser Glu
            100                 105                 110

Gly Leu Leu Leu Gly Leu Met Ala Tyr Asp His Tyr Val Ala Val Ser
        115                 120                 125

His Pro Leu His Tyr Pro Ile Leu Met Asn Gln Arg Val Cys Leu Gln
    130                 135                 140

Ile Thr Gly Ser Ser Trp Ala Phe Gly Ile Ile Asp Gly Val Ile Gln
145                 150                 155                 160

Met Val Ala Ala Met Gly Leu Pro Tyr Cys Gly Ser Arg Ser Val Asp
                165                 170                 175
```

```
His Phe Phe Cys Glu Val Gln Ala Leu Leu Lys Leu Ala Cys Ala Asp
            180                 185                 190

Thr Ser Leu Phe Asp Thr Leu Leu Phe Ala Cys Cys Val Phe Met Leu
        195                 200                 205

Leu Leu Pro Phe Ser Ile Ile Met Ala Ser Tyr Ala Cys Ile Leu Gly
    210                 215                 220

Ala Val Leu Arg Ile Arg Ser Ala Gln Ala Trp Lys Lys Ala Leu Ala
225                 230                 235                 240

Thr Cys Ser Ser His Leu Thr Ala Val Thr Leu Phe Tyr Gly Ala Ala
                245                 250                 255

Met Phe Met Tyr Leu Arg Pro Arg Arg Tyr Arg Ala Pro Ser His Asp
            260                 265                 270

Lys Val Ala Ser Ile Phe Tyr Thr Val Leu Thr Pro Met Leu Asn Pro
        275                 280                 285

Leu Ile Tyr Ser Leu Arg Asn Gly Glu Val Met Gly Ala Leu Arg Lys
    290                 295                 300

Gly Leu Asp Arg Cys Arg Ile Gly Ser Gln His
305                 310                 315
```

<210> 70
<211> 313
<212> PRT
<213> Homo sapiens

<400> 70

```
Met Asn Trp Glu Asn Glu Ser Ser Pro Lys Glu Phe Ile Leu Leu Gly
  1               5                  10                  15

Phe Ser Asp Arg Ala Trp Leu Gln Met Pro Leu Phe Val Val Leu Leu
             20                  25                  30

Ile Ser Tyr Thr Ile Thr Ile Phe Gly Asn Val Ser Ile Met Met Val
         35                  40                  45

Cys Ile Leu Asp Pro Lys Leu His Thr Pro Met Tyr Phe Phe Leu Thr
     50                  55                  60

Asn Leu Ser Ile Leu Asp Leu Cys Tyr Thr Thr Thr Thr Val Pro His
 65                  70                  75                  80

Met Leu Val Asn Ile Gly Cys Asn Lys Lys Thr Ile Ser Tyr Ala Gly
                 85                  90                  95

Cys Val Ala His Leu Ile Ile Phe Leu Ala Leu Gly Ala Thr Glu Cys
            100                 105                 110

Leu Leu Leu Ala Val Met Ser Phe Asp Arg Tyr Val Ala Val Cys Arg
```

```
        115                 120                 125

Pro Leu His Tyr Val Val Ile Met Asn Tyr Trp Phe Cys Leu Arg Met
    130                 135                 140

Ala Ala Phe Ser Trp Leu Ile Gly Phe Gly Asn Ser Val Leu Gln Ser
145                 150                 155                 160

Ser Leu Thr Leu Asn Met Pro Arg Cys Gly His Gln Glu Val Asp His
                165                 170                 175

Phe Phe Cys Glu Val Pro Ala Leu Leu Lys Leu Ser Cys Ala Asp Thr
            180                 185                 190

Lys Pro Ile Glu Ala Glu Leu Phe Phe Phe Ser Val Leu Ile Leu Leu
        195                 200                 205

Ile Pro Val Thr Leu Ile Leu Ile Ser Tyr Gly Phe Ile Ala Gln Ala
    210                 215                 220

Val Leu Lys Ile Arg Ser Ala Glu Gly Arg Gln Lys Ala Phe Gly Thr
225                 230                 235                 240

Cys Gly Ser His Met Ile Val Val Ser Leu Phe Tyr Gly Thr Ala Ile
                245                 250                 255

Tyr Met Tyr Leu Gln Pro Pro Ser Ser Thr Ser Lys Asp Trp Gly Lys
            260                 265                 270

Met Val Ser Leu Phe Tyr Gly Ile Ile Thr Ser Met Leu Asn Ser Leu
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Lys Asp Met Lys Glu Ala Phe Lys Arg Leu
    290                 295                 300

Met Pro Arg Ile Phe Phe Cys Lys Lys
305                 310


<210> 71
<211> 315
<212> PRT
<213> Mus musculus

<400> 71
Met Glu Val Cys Asn Ser Thr Leu Arg Ser Gly Phe Ile Leu Met Gly
  1               5                  10                  15

Ile Leu Asp Asp Asn Asp Phe Pro Glu Leu Leu Cys Ala Thr Ile Thr
             20                  25                  30

Ala Leu Tyr Leu Leu Ala Leu Thr Ser Asn Gly Leu Leu Leu Leu Val
         35                  40                  45

Ile Thr Met Asp Thr Arg Leu His Val Pro Met Tyr Leu Leu Leu Trp
     50                  55                  60
```

```
Gln Leu Ser Leu Met Asp Leu Leu Leu Thr Ser Val Ile Thr Pro Lys
 65                  70                  75                  80

Ala Ile Leu Asp Tyr Leu Leu Lys Asp Asn Thr Ile Ser Phe Gly Gly
                 85                  90                  95

Cys Ala Leu Gln Met Phe Leu Ala Leu Thr Leu Gly Thr Ala Glu Asp
            100                 105                 110

Leu Leu Leu Ser Phe Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His
        115                 120                 125

Pro Leu Asn Tyr Thr Ile Leu Met Ser Gln Lys Val Cys Cys Leu Met
    130                 135                 140

Ile Ala Thr Ser Trp Ser Leu Ala Ser Leu Ser Ala Leu Gly Tyr Ser
145                 150                 155                 160

Met Tyr Thr Met Gln Tyr Pro Phe Cys Lys Ser Arg Gln Ile Arg His
                165                 170                 175

Leu Phe Cys Glu Ile Pro Pro Leu Leu Lys Leu Ala Cys Ala Asp Thr
            180                 185                 190

Ser Thr Tyr Glu Leu Met Val Tyr Leu Met Gly Val Thr Leu Leu Phe
        195                 200                 205

Pro Ala Leu Ala Ala Ile Leu Ala Ser Tyr Ser Leu Ile Leu Phe Thr
    210                 215                 220

Val Leu His Met Pro Ser Asn Glu Gly Arg Arg Lys Ala Leu Val Thr
225                 230                 235                 240

Cys Ser Ser His Leu Thr Val Val Gly Met Trp Tyr Gly Gly Ala Ile
                245                 250                 255

Val Met Tyr Val Leu Pro Ser Ser Phe His Ser Pro Lys Gln Asp Asn
            260                 265                 270

Ile Ser Ser Val Phe Tyr Thr Ile Phe Thr Pro Ala Leu Asn Pro Leu
        275                 280                 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Thr Gly Ala Leu Arg Arg Val
    290                 295                 300

Leu Gly Lys Arg Leu Ser Val Gln Ser Thr Phe
305                 310                 315


<210> 72
<211> 317
<212> PRT
<213> Canis familiaris

<400> 72
Met Gly Thr Gly Asn Gln Thr Trp Val Arg Glu Phe Val Leu Leu Gly
  1               5                  10                  15
```

```
Leu Ser Ser Asp Trp Asp Thr Glu Val Ser Leu Phe Val Leu Phe Leu
            20                  25                  30

Ile Thr Tyr Met Val Thr Val Leu Gly Asn Phe Leu Ile Ile Leu Leu
        35                  40                  45

Ile Arg Leu Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Thr
    50                  55                  60

Asn Leu Ser Leu Val Asp Val Ser Tyr Ala Thr Ser Ile Ile Pro Gln
65                  70                  75                  80

Met Leu Ala His Leu Leu Ala Ala His Lys Ala Ile Pro Phe Val Ser
                85                  90                  95

Cys Ala Ala Gln Leu Phe Phe Ser Leu Gly Leu Gly Gly Ile Glu Phe
            100                 105                 110

Val Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Val Ala Val Cys Asp
        115                 120                 125

Pro Leu Arg Tyr Ser Val Ile Met His Gly Gly Leu Cys Thr Arg Leu
    130                 135                 140

Ala Ile Thr Ser Trp Val Ser Gly Ser Met Asn Ser Leu Met Gln Thr
145                 150                 155                 160

Val Ile Thr Phe Gln Leu Pro Met Cys Thr Asn Lys Tyr Ile Asp His
                165                 170                 175

Ile Ser Cys Glu Leu Leu Ala Val Val Arg Leu Ala Cys Val Asp Thr
            180                 185                 190

Ser Ser Asn Glu Ile Ala Ile Met Val Ser Ser Ile Val Leu Leu Met
        195                 200                 205

Thr Pro Phe Cys Leu Val Leu Leu Ser Tyr Ile Gln Ile Ile Ser Thr
    210                 215                 220

Ile Leu Lys Ile Gln Ser Thr Glu Gly Arg Lys Lys Ala Phe His Thr
225                 230                 235                 240

Cys Ala Ser His Leu Thr Val Val Val Leu Cys Tyr Gly Met Ala Ile
                245                 250                 255

Phe Thr Tyr Ile Gln Pro Arg Ser Ser Pro Ser Val Leu Gln Glu Lys
            260                 265                 270

Leu Ile Ser Leu Phe Tyr Ser Val Leu Thr Pro Met Leu Asn Pro Met
        275                 280                 285

Ile Tyr Ser Val Arg Asn Lys Glu Val Lys Gly Ala Trp Gln Lys Leu
    290                 295                 300

Leu Gly Gln Leu Thr Gly Ile Thr Ser Lys Leu Ala Thr
305                 310                 315
```

<210> 73
<211> 932
<212> DNA
<213> Homo sapiens

<400> 73
tgacagaatt cattcttctt ggtctgactc agtctcaaga tgctcaactt ctggtctttg 60
tgctagtctt aattttctac cttatcatcc tccctggaaa tttcctcatc attttcacca 120
taaagtcaga ccctgggctc acagcccccc tctatttctt tctgggcaac ttggccttac 180
tggatgcatc ctactccttc attgtggttc ccaggatgtt ggtggacttc ctctctgaga 240
agaaggtaat ctcctataga agctgcatca ctcagctctt tttcttgcat tttcttggag 300
cgggagagat gttcctcctc gttgtgatgg cctttgaccg ctacatcgcc atctgccggc 360
ctttacacta ttcaaccatc atgaacccta gagcctgcta tgcattatcg ttggttctgt 420
ggcttggggg ctttatccat tccattgtac aagtagccct tatcctgcac ttgcctttct 480
gtggcccaaa ccagctcgat aacttcttct gtgatgttcc acaggtcatc aagctggcct 540
gcaccaatac ctttgtggtg gagcttctga tggtctccaa cagtggcctg ctcagcctcc 600
tgtgcttcct gggccttctg gcctcctatg cagtcatcct ctgtcgtata agggagcact 660
cctctgaagg aaagagcaag gctatttcca catgcaccac ccatattatc attatatttc 720
tcatgtttgg acctgctatt ttcatctaca cttgcccctt ccaggctttc ccagctgaca 780
aggtagtttc tcttttccat actgtcatct ttcctttgat gaaccctgtt atttatacgc 840
ttcgcaacca ggaggtgaaa gcttccatga ggaagttgtt aagtcaacat atgttttgct 900
gaatagaaga aagagaaaag caagaacgga ga 932

<210> 74
<211> 299
<212> PRT
<213> Homo sapiens

<400> 74
Thr Glu Phe Ile Leu Leu Gly Leu Thr Gln Ser Gln Asp Ala Gln Leu
1 5 10 15

Leu Val Phe Val Leu Val Leu Ile Phe Tyr Leu Ile Ile Leu Pro Gly
20 25 30

Asn Phe Leu Ile Ile Phe Thr Ile Lys Ser Asp Pro Gly Leu Thr Ala
35 40 45

Pro Leu Tyr Phe Phe Leu Gly Asn Leu Ala Leu Leu Asp Ala Ser Tyr
50 55 60

Ser Phe Ile Val Val Pro Arg Met Leu Val Asp Phe Leu Ser Glu Lys
65 70 75 80

Lys Val Ile Ser Tyr Arg Ser Cys Ile Thr Gln Leu Phe Phe Leu His
85 90 95

Phe Leu Gly Ala Gly Glu Met Phe Leu Leu Val Val Met Ala Phe Asp
100 105 110

Arg Tyr Ile Ala Ile Cys Arg Pro Leu His Tyr Ser Thr Ile Met Asn
115 120 125

Pro Arg Ala Cys Tyr Ala Leu Ser Leu Val Leu Trp Leu Gly Gly Phe

```
    130                 135                 140

Ile His Ser Ile Val Gln Val Ala Leu Ile Leu His Leu Pro Phe Cys
145                 150                 155                 160

Gly Pro Asn Gln Leu Asp Asn Phe Phe Cys Asp Val Pro Gln Val Ile
                165                 170                 175

Lys Leu Ala Cys Thr Asn Thr Phe Val Val Glu Leu Leu Met Val Ser
            180                 185                 190

Asn Ser Gly Leu Leu Ser Leu Leu Cys Phe Leu Gly Leu Leu Ala Ser
        195                 200                 205

Tyr Ala Val Ile Leu Cys Arg Ile Arg Glu His Ser Ser Glu Gly Lys
    210                 215                 220

Ser Lys Ala Ile Ser Thr Cys Thr Thr His Ile Ile Ile Ile Phe Leu
225                 230                 235                 240

Met Phe Gly Pro Ala Ile Phe Ile Tyr Thr Cys Pro Phe Gln Ala Phe
                245                 250                 255

Pro Ala Asp Lys Val Val Ser Leu Phe His Thr Val Ile Phe Pro Leu
            260                 265                 270

Met Asn Pro Val Ile Tyr Thr Leu Arg Asn Gln Glu Val Lys Ala Ser
        275                 280                 285

Met Arg Lys Leu Leu Ser Gln His Met Phe Cys
    290                 295


<210> 75
<211> 308
<212> PRT
<213> Mus musculus

<400> 75
Met Gly Ala Leu Asn Gln Thr Arg Val Thr Glu Phe Ile Phe Leu Gly
  1               5                  10                  15

Leu Thr Asp Asn Trp Val Leu Glu Ile Leu Phe Phe Val Pro Phe Thr
             20                  25                  30

Val Thr Tyr Met Leu Thr Leu Leu Gly Asn Phe Leu Ile Val Val Thr
         35                  40                  45

Ile Val Phe Thr Pro Arg Leu His Asn Pro Met Tyr Phe Phe Leu Ser
     50                  55                  60

Asn Leu Ser Phe Ile Asp Ile Cys His Ser Ser Val Thr Val Pro Lys
 65                  70                  75                  80

Met Leu Glu Gly Leu Leu Leu Glu Arg Lys Thr Ile Ser Phe Asp Asn
                 85                  90                  95
```

```
Cys Ile Ala Gln Leu Phe Phe Leu His Leu Phe Ala Cys Ser Glu Ile
            100                 105                 110

Phe Leu Leu Thr Ile Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Ile
        115                 120                 125

Pro Leu His Tyr Ser Asn Val Met Asn Met Lys Val Cys Val Gln Leu
    130                 135                 140

Val Phe Ala Leu Trp Leu Gly Gly Thr Ile His Ser Leu Val Gln Thr
145                 150                 155                 160

Phe Leu Thr Ile Arg Leu Pro Tyr Cys Gly Pro Asn Ile Ile Asp Ser
                165                 170                 175

Tyr Phe Cys Asp Val Pro Pro Val Ile Lys Leu Ala Cys Thr Asp Thr
            180                 185                 190

Tyr Leu Thr Gly Ile Leu Ile Val Ser Asn Ser Gly Thr Ile Ser Leu
        195                 200                 205

Val Cys Phe Leu Ala Leu Val Thr Ser Tyr Thr Val Ile Leu Phe Ser
    210                 215                 220

Leu Arg Lys Lys Ser Ala Glu Gly Arg Arg Lys Ala Leu Ser Thr Cys
225                 230                 235                 240

Ser Ala His Phe Met Val Val Thr Leu Phe Phe Gly Pro Cys Ile Phe
                245                 250                 255

Leu Tyr Thr Arg Pro Asp Ser Ser Phe Ser Ile Asp Lys Val Val Ser
            260                 265                 270

Val Phe Tyr Thr Val Val Thr Pro Leu Leu Asn Pro Leu Ile Tyr Thr
        275                 280                 285

Leu Arg Asn Glu Glu Val Lys Thr Ala Met Lys His Leu Arg Gln Arg
    290                 295                 300

Arg Ile Cys Ser
305
```

<210> 76
<211> 310
<212> PRT
<213> Homo sapiens

<400> 76

```
Met Glu Pro Gln Asn Thr Thr Gln Val Ser Met Phe Val Leu Leu Gly
  1               5                  10                  15

Phe Ser Gln Thr Gln Glu Leu Gln Lys Phe Leu Phe Leu Leu Phe Leu
             20                  25                  30

Leu Val Tyr Val Thr Thr Ile Val Gly Asn Leu Leu Ile Met Val Thr
         35                  40                  45
```

```
Val Thr Phe Asp Cys Arg Leu His Thr Pro Met Tyr Phe Leu Leu Arg
     50                  55                  60

Asn Leu Ala Leu Ile Asp Leu Cys Tyr Ser Thr Val Thr Ser Pro Lys
 65                  70                  75                  80

Met Leu Val Asp Phe Leu His Glu Thr Lys Thr Ile Ser Tyr Gln Gly
                 85                  90                  95

Cys Met Ala Gln Ile Phe Phe Phe His Leu Leu Gly Gly Gly Thr Val
            100                 105                 110

Phe Phe Leu Ser Val Met Ala Tyr Asp Arg Tyr Ile Ala Ile Ser Gln
        115                 120                 125

Pro Leu Arg Tyr Val Thr Ile Met Asn Thr Gln Leu Cys Val Gly Leu
    130                 135                 140

Val Val Ala Ala Trp Val Gly Gly Phe Val His Ser Ile Val Gln Leu
145                 150                 155                 160

Ala Leu Ile Leu Pro Leu Pro Phe Cys Asp Pro Asn Ile Ile Asp Asn
                165                 170                 175

Phe Tyr Cys Asp Val Pro Gln Val Leu Arg Leu Ala Cys Thr Asp Thr
            180                 185                 190

Ser Leu Leu Glu Phe Leu Met Ile Phe Asn Ser Gly Leu Leu Val Ile
        195                 200                 205

Ile Trp Phe Leu Leu Leu Leu Leu Ile Ser Tyr Thr Val Ile Leu Val Met
    210                 215                 220

Leu Arg Ser His Ser Gly Lys Ala Arg Arg Lys Ala Ala Ser Thr Cys
225                 230                 235                 240

Thr Thr His Ile Ile Val Val Ser Met Ile Phe Ile Pro Cys Ile Tyr
                245                 250                 255

Ile Tyr Thr Trp Pro Phe Thr Pro Phe Leu Met Asp Lys Ala Val Ser
            260                 265                 270

Ile Ser Tyr Thr Val Met Thr Pro Met Leu Asn Pro Met Ile Tyr Thr
        275                 280                 285

Leu Arg Asn Gln Asp Met Lys Ala Ala Met Arg Arg Leu Gly Lys Cys
    290                 295                 300

Leu Val Ile Cys Arg Glu
305                 310
```

<210> 77
<211> 307
<212> PRT
<213> Homo sapiens

<400> 77

```
Met Glu Thr Gly Asn Leu Thr Trp Val Ser Asp Phe Val Phe Leu Gly
  1               5                  10                  15

Leu Ser Gln Thr Arg Glu Leu Gln Arg Phe Leu Phe Leu Met Phe Leu
             20                  25                  30

Phe Val Tyr Ile Thr Thr Val Met Gly Asn Ile Leu Ile Ile Ile Thr
         35                  40                  45

Val Thr Ser Asp Ser Gln Leu His Thr Pro Met Tyr Phe Leu Leu Arg
     50                  55                  60

Asn Leu Ala Val Leu Asp Leu Cys Phe Ser Ser Val Thr Ala Pro Lys
 65                  70                  75                  80

Met Leu Val Asp Leu Leu Ser Glu Lys Lys Thr Ile Ser Tyr Gln Gly
                 85                  90                  95

Cys Met Gly Gln Ile Phe Phe Phe His Phe Leu Gly Gly Ala Met Val
            100                 105                 110

Phe Phe Leu Ser Val Met Ala Phe Asp Arg Leu Ile Ala Ile Ser Arg
        115                 120                 125

Pro Leu Arg Tyr Val Thr Val Met Asn Thr Gln Leu Trp Val Gly Leu
    130                 135                 140

Val Val Ala Thr Trp Val Gly Gly Phe Val His Ser Ile Val Gln Leu
145                 150                 155                 160

Ala Leu Met Leu Pro Leu Pro Phe Cys Gly Pro Asn Ile Leu Asp Asn
                165                 170                 175

Phe Tyr Cys Asp Val Pro Gln Val Leu Arg Leu Ala Cys Thr Asp Thr
            180                 185                 190

Ser Leu Leu Glu Phe Leu Lys Ile Ser Asn Ser Gly Leu Leu Asp Val
        195                 200                 205

Val Trp Phe Phe Leu Leu Leu Met Ser Tyr Leu Phe Ile Leu Val Met
    210                 215                 220

Leu Arg Ser His Pro Gly Glu Ala Arg Arg Lys Ala Ala Ser Thr Cys
225                 230                 235                 240

Thr Thr His Ile Ile Val Val Ser Met Ile Phe Val Pro Ser Ile Tyr
                245                 250                 255

Leu Tyr Ala Arg Pro Phe Thr Pro Phe Pro Met Asp Lys Leu Val Ser
            260                 265                 270

Ile Gly His Thr Val Met Thr Pro Met Leu Asn Pro Met Ile Tyr Thr
        275                 280                 285

Leu Arg Asn Gln Asp Met Gln Ala Ala Val Arg Arg Leu Gly Arg His
```

```
    290                 295                 300

Arg Leu Val
305


<210> 78
<211> 310
<212> PRT
<213> Mus musculus

<400> 78
Met Glu Lys Ala Val Leu Ile Asn Glu Thr Ser Val Met Ser Phe Arg
  1               5                  10                  15

Leu Thr Gly Leu Ser Thr Asn Pro Leu Val Gln Met Ala Val Phe Phe
             20                  25                  30

Ile Phe Leu Ile Phe Tyr Val Leu Thr Leu Val Gly Asn Ile Leu Ile
         35                  40                  45

Val Ile Thr Ile Ile Tyr Asp Arg Arg Leu His Thr Pro Met Tyr Phe
     50                  55                  60

Phe Leu Ser Asn Leu Ser Phe Ile Asp Val Cys His Ser Thr Val Thr
 65                  70                  75                  80

Val Pro Lys Met Leu Ser Asp Thr Phe Ser Glu Glu Lys Leu Ile Ser
                 85                  90                  95

Phe Asp Ala Cys Val Val Gln Met Phe Phe Leu His Leu Phe Ala Cys
            100                 105                 110

Thr Glu Ile Phe Leu Leu Thr Val Met Ala Tyr Asp Arg Tyr Val Ala
        115                 120                 125

Ile Cys Lys Pro Leu Gln Tyr Met Thr Ile Met Asn Trp Lys Val Cys
    130                 135                 140

Met Met Leu Ala Ala Ala Leu Trp Thr Gly Gly Thr Ile His Ser Ile
145                 150                 155                 160

Ser Leu Thr Ser Leu Thr Ile Lys Leu Pro Tyr Cys Gly Pro Asp Glu
                165                 170                 175

Ile Asp Asn Phe Phe Cys Asp Val Pro Gln Val Ile Lys Leu Ala Cys
            180                 185                 190

Thr Asp Thr His Ile Ile Glu Ile Leu Ile Val Ser Asn Ser Gly Leu
        195                 200                 205

Ile Ser Val Val Cys Phe Val Val Leu Val Val Ser Tyr Ala Val Ile
    210                 215                 220

Leu Val Ser Leu Arg Gln Gln Ile Ser Asp Gly Lys Arg Lys Ala Leu
225                 230                 235                 240
```

```
Ser Thr Cys Ala Ala His Leu Thr Val Val Thr Leu Phe Leu Gly His
                245                 250                 255

Cys Ile Phe Ile Tyr Ser Arg Pro Ser Thr Ser Leu Pro Glu Asp Lys
            260                 265                 270

Val Val Ser Val Phe Phe Thr Ala Val Thr Pro Leu Leu Asn Pro Ile
        275                 280                 285

Ile Tyr Thr Leu Arg Asn Glu Asp Met Lys Ser Ala Leu Asn Lys Leu
    290                 295                 300

Ile Lys Arg Arg Glu Lys
305                 310
```

<210> 79
<211> 313
<212> PRT
<213> Mus musculus

<400> 79

```
Met Glu Lys Ala Val Leu Ile Asn Gln Thr Ser Val Met Ser Phe Arg
  1               5                  10                  15

Leu Thr Gly Leu Ser Thr Asn Pro Lys Val Gln Met Ala Ile Phe Phe
             20                  25                  30

Ile Phe Leu Ile Phe Tyr Val Leu Thr Leu Val Gly Asn Ile Leu Ile
         35                  40                  45

Val Val Thr Ile Ile His Asp His Arg Leu His Thr Pro Met Tyr Phe
     50                  55                  60

Phe Leu Ser Asn Leu Ser Phe Ile Asp Val Cys His Ser Thr Val Thr
 65                  70                  75                  80

Val Pro Lys Met Leu Ser Asp Thr Phe Ser Glu Glu Lys Leu Ile Ser
                 85                  90                  95

Phe Asp Asp Cys Val Val Gln Ile Phe Phe Leu His Leu Phe Ala Cys
            100                 105                 110

Thr Glu Ile Phe Leu Leu Thr Val Met Ala Tyr Asp Arg Tyr Val Ala
        115                 120                 125

Ile Cys Lys Pro Leu Arg Tyr Met Thr Ile Met Asn Trp Lys Val Cys
    130                 135                 140

Met Val Leu Gly Gly Ala Met Trp Thr Ala Gly Thr Ile His Ser Ile
145                 150                 155                 160

Ser Phe Thr Ser Leu Thr Ile Lys Leu Pro Tyr Cys Gly Pro Asn Glu
                165                 170                 175

Leu Asp Ser Phe Phe Cys Asp Val Pro Gln Val Ile Glu Leu Ala Cys
            180                 185                 190
```

```
Thr Asp Thr Arg Ile Thr Glu Ile Leu Val Val Ser Asn Ser Gly Met
        195                 200                 205

Ile Ser Met Val Cys Phe Val Ile Ile Val Val Ser Tyr Ala Val Ile
    210                 215                 220

Leu Val Ser Leu Arg Gln Gln Ile Ser Asp Gly Lys Arg Lys Ala Leu
225                 230                 235                 240

Ser Thr Cys Ala Ala His Leu Thr Val Val Thr Leu Phe Leu Gly His
                245                 250                 255

Cys Ile Phe Ile Tyr Ser Arg Pro Ala Ile Ser Leu Pro Glu Asp Lys
            260                 265                 270

Ile Val Ser Ala Phe Phe Thr Ala Ile Thr Pro Leu Leu Asn Pro Ile
        275                 280                 285

Ile Tyr Thr Phe Arg Asn Glu Asp Met Lys Ser Ala Leu Lys Lys Leu
    290                 295                 300

Ile Arg Arg Lys Glu Gly Lys Glu Lys
305                 310
```

<210> 80
<211> 984
<212> DNA
<213> Homo sapiens

<400> 80
```
cctccaaaga gccactttct tcctgacggg cttccaaggt ctagaaggtc tccatggctg 60
gatctctatt cccttctgct tcatctacct gacagttatc ttggggaacc tcaccattct 120
ccacgtcatt tgtactgatg ccactctcca tggacccatg tactatttct tgggcatgct 180
agctgtcaca gacttaggcc tttgcctttc cacactgccc actgtgctgg gcattttctg 240
gtttgatacc agagagattg gcatccctgc ctgtttcact cagctcttct tcatccacac 300
cttgtcttca atggagtcat cagttctgtt atccatgtcc attgaccgct acgtggccgt 360
ctgcaaccca ctgcatgact ccaccgtcct gacacctgca tgtattgtca agatggggct 420
aagctcagtg cttagaagtg ctctcctcat cctccccttg ccattcctcc tgaagcgctt 480
ccaatactgc cactcccatg tgctggctca tgcttattgt cttcacctgg agatcatgaa 540
gctggcctgc tctagcatca ttgtcaatca catctatggg ctctttgttg tggcctgcac 600
cgtgggtgtg gactccctgc tcatctttct ctcatacgcc ctcatccttc gcaccgtgct 660
cagcattgcc tcccaccagg agcgactccg agccctcaac acctgtgtct ctcatatctg 720
tgctgtactg ctcttctaca tccccatgat tggcttgtct cttgtgcatc gctttggtga 780
acatctgccc cgcgttgtac acctcttcat gtcctatgtg tatctgctgg taccacccct 840
tatgaacccc atcatctaca gcatcaagac caagcaaatt cgccagcgca tcattaagaa 900
gtttcagttt ataaagtcac ttaggtgttt ttggaaggat taagttagag taaagagagg 960
aagttttgga cataaagccc acag                                      984
```

<210> 81
<211> 313
<212> PRT
<213> Homo sapiens

<400> 81

```
Leu Gln Arg Ala Thr Phe Phe Leu Thr Gly Phe Gln Gly Leu Glu Gly
  1               5                  10                  15

Leu His Gly Trp Ile Ser Ile Pro Phe Cys Phe Ile Tyr Leu Thr Val
             20                  25                  30

Ile Leu Gly Asn Leu Thr Ile Leu His Val Ile Cys Thr Asp Ala Thr
         35                  40                  45

Leu His Gly Pro Met Tyr Tyr Phe Leu Gly Met Leu Ala Val Thr Asp
     50                  55                  60

Leu Gly Leu Cys Leu Ser Thr Leu Pro Thr Val Leu Gly Ile Phe Trp
 65                  70                  75                  80

Phe Asp Thr Arg Glu Ile Gly Ile Pro Ala Cys Phe Thr Gln Leu Phe
                 85                  90                  95

Phe Ile His Thr Leu Ser Ser Met Glu Ser Ser Val Leu Leu Ser Met
            100                 105                 110

Ser Ile Asp Arg Tyr Val Ala Val Cys Asn Pro Leu His Asp Ser Thr
        115                 120                 125

Val Leu Thr Pro Ala Cys Ile Val Lys Met Gly Leu Ser Ser Val Leu
    130                 135                 140

Arg Ser Ala Leu Leu Ile Leu Pro Leu Pro Phe Leu Leu Lys Arg Phe
145                 150                 155                 160

Gln Tyr Cys His Ser His Val Leu Ala His Ala Tyr Cys Leu His Leu
                165                 170                 175

Glu Ile Met Lys Leu Ala Cys Ser Ser Ile Ile Val Asn His Ile Tyr
            180                 185                 190

Gly Leu Phe Val Val Ala Cys Thr Val Gly Val Asp Ser Leu Leu Ile
        195                 200                 205

Phe Leu Ser Tyr Ala Leu Ile Leu Arg Thr Val Leu Ser Ile Ala Ser
    210                 215                 220

His Gln Glu Arg Leu Arg Ala Leu Asn Thr Cys Val Ser His Ile Cys
225                 230                 235                 240

Ala Val Leu Leu Phe Tyr Ile Pro Met Ile Gly Leu Ser Leu Val His
                245                 250                 255

Arg Phe Gly Glu His Leu Pro Arg Val Val His Leu Phe Met Ser Tyr
            260                 265                 270

Val Tyr Leu Leu Val Pro Pro Leu Met Asn Pro Ile Ile Tyr Ser Ile
        275                 280                 285

Lys Thr Lys Gln Ile Arg Gln Arg Ile Ile Lys Lys Phe Gln Phe Ile
    290                 295                 300
```

```
Lys Ser Leu Arg Cys Phe Trp Lys Asp
305                 310
```

<210> 82
<211> 1008
<212> DNA
<213> Homo sapiens

<400> 82
```
ctatgacaat tcttcttaat gcagcctcca aagagccact ttcttcctga cgggcttcca 60
aggtctagaa ggtctccatg gctggatctc tattcccttc tgcttcatct acctgacagt 120
tatcttgggg aacctcacca ttctccacgt catttgtact gatgccactc tccatggacc 180
catgtactat ttcttgggca tgctagctgt cacagactta ggcctttgcc tttccacact 240
gcccactgtg ctgggcattt tctggtttga taccagagag attggcatcc ctgcctgttt 300
cactcagctc ttcttcatcc acaccttgtc ttcaatggag tcatcagttc tgttatccat 360
gtccattgac cgctccgtgg ccgtctgcaa cccactgcat gactccaccg tcctgacacc 420
tgcatgtatt gtcaagatgg ggctaagctc agtgcttaga agtgctctcc tcatcctccc 480
cttgccattc ctcctgaagc gcttccaata ctgccactcc catgtgctgg ctcatgctta 540
ttgtcttcac ctggagatca tgaagctggc ctgctctagc atcattgtca atcacatcta 600
tgggctcttt gttgtggcct gcaccgtggg tgtggactcc ctgctcatct ttctctcata 660
cgccctcatc cttcgcaccg tgctcagcat tgcctcccac caggagcgac tccgagccct 720
caacacctgt gtctctcata tctgtgctgt actgctcttc tacatcccca tgattggctt 780
gtctcttgtg catcgctttg gtgaacatct gccccgcgtt gtacacctct tcatgtccta 840
tgtgtatctg ctggtaccac cccttatgaa ccccatcatc tacagcatca agaccaagca 900
aattcgccag cgcatcatta agaagtttca gtttataaag tcacttaggt gtttttggaa 960
ggattaagtt agagtaaaga gaggaagttt tggacataaa gcccacag              1008
```

<210> 83
<211> 315
<212> PRT
<213> Homo sapiens

<400> 83
```
Cys Ser Leu Gln Arg Ala Thr Phe Phe Leu Thr Gly Phe Gln Gly Leu
  1               5                  10                  15

Glu Gly Leu His Gly Trp Ile Ser Ile Pro Phe Cys Phe Ile Tyr Leu
             20                  25                  30

Thr Val Ile Leu Gly Asn Leu Thr Ile Leu His Val Ile Cys Thr Asp
         35                  40                  45

Ala Thr Leu His Gly Pro Met Tyr Tyr Phe Leu Gly Met Leu Ala Val
     50                  55                  60

Thr Asp Leu Gly Leu Cys Leu Ser Thr Leu Pro Thr Val Leu Gly Ile
 65                  70                  75                  80

Phe Trp Phe Asp Thr Arg Glu Ile Gly Ile Pro Ala Cys Phe Thr Gln
                 85                  90                  95

Leu Phe Phe Ile His Thr Leu Ser Ser Met Glu Ser Ser Val Leu Leu
            100                 105                 110

Ser Met Ser Ile Asp Arg Ser Val Ala Val Cys Asn Pro Leu His Asp
```

```
        115                 120                 125

Ser Thr Val Leu Thr Pro Ala Cys Ile Val Lys Met Gly Leu Ser Ser
    130                 135                 140

Val Leu Arg Ser Ala Leu Leu Ile Leu Pro Leu Pro Phe Leu Leu Lys
145                 150                 155                 160

Arg Phe Gln Tyr Cys His Ser His Val Leu Ala His Ala Tyr Cys Leu
                165                 170                 175

His Leu Glu Ile Met Lys Leu Ala Cys Ser Ser Ile Ile Val Asn His
            180                 185                 190

Ile Tyr Gly Leu Phe Val Val Ala Cys Thr Val Gly Val Asp Ser Leu
        195                 200                 205

Leu Ile Phe Leu Ser Tyr Ala Leu Ile Leu Arg Thr Val Leu Ser Ile
    210                 215                 220

Ala Ser His Gln Glu Arg Leu Arg Ala Leu Asn Thr Cys Val Ser His
225                 230                 235                 240

Ile Cys Ala Val Leu Leu Phe Tyr Ile Pro Met Ile Gly Leu Ser Leu
                245                 250                 255

Val His Arg Phe Gly Glu His Leu Pro Arg Val Val His Leu Phe Met
            260                 265                 270

Ser Tyr Val Tyr Leu Leu Val Pro Pro Leu Met Asn Pro Ile Ile Tyr
        275                 280                 285

Ser Ile Lys Thr Lys Gln Ile Arg Gln Arg Ile Ile Lys Lys Phe Gln
    290                 295                 300

Phe Ile Lys Ser Leu Arg Cys Phe Trp Lys Asp
305                 310                 315


<210> 84
<211> 312
<212> PRT
<213> Homo sapiens

<400> 84
Met Ser Ser Ser Ser Ser Ser His Pro Phe Leu Leu Thr Gly Phe Pro
  1               5                  10                  15

Gly Leu Glu Glu Ala His His Trp Ile Ser Val Phe Phe Leu Phe Met
             20                  25                  30

Tyr Ile Ser Ile Leu Phe Gly Asn Gly Thr Leu Leu Leu Leu Ile Lys
         35                  40                  45

Glu Asp His Asn Leu His Glu Pro Met Tyr Phe Phe Leu Ala Met Leu
     50                  55                  60
```

```
Ala Ala Thr Asp Leu Gly Leu Ala Leu Thr Thr Met Pro Thr Val Leu
 65                  70                  75                  80

Gly Val Leu Trp Leu Asp His Arg Glu Ile Gly Ser Ala Ala Cys Phe
                85                  90                  95

Ser Gln Ala Tyr Phe Ile His Ser Leu Ser Phe Leu Glu Ser Gly Ile
            100                 105                 110

Leu Leu Ala Met Ala Tyr Asp Arg Phe Ile Ala Ile Cys Asn Pro Leu
        115                 120                 125

Arg Tyr Thr Ser Val Leu Thr Asn Thr Arg Val Val Lys Ile Gly Leu
    130                 135                 140

Gly Val Leu Met Arg Gly Phe Val Ser Val Val Pro Pro Ile Arg Pro
145                 150                 155                 160

Leu Tyr Phe Phe Leu Tyr Cys His Ser His Val Leu Ser His Ala Phe
                165                 170                 175

Cys Leu His Gln Asp Val Ile Lys Leu Ala Cys Ala Asp Thr Thr Phe
            180                 185                 190

Asn Arg Leu Tyr Pro Ala Val Leu Val Val Phe Ile Phe Val Leu Asp
        195                 200                 205

Tyr Leu Ile Ile Phe Ile Ser Tyr Val Leu Ile Leu Lys Thr Val Leu
    210                 215                 220

Ser Ile Ala Ser Arg Glu Glu Arg Ala Lys Ala Leu Ile Thr Cys Val
225                 230                 235                 240

Ser His Ile Cys Cys Val Leu Val Phe Tyr Val Thr Val Ile Gly Leu
                245                 250                 255

Ser Leu Ile His Arg Phe Gly Lys Gln Val Pro His Ile Val His Leu
            260                 265                 270

Ile Met Ser Tyr Ala Tyr Phe Leu Phe Pro Pro Leu Met Asn Pro Ile
        275                 280                 285

Thr Tyr Ser Val Lys Thr Lys Gln Ile Gln Asn Ala Ile Leu His Leu
    290                 295                 300

Phe Thr Thr His Arg Ile Gly Thr
305                 310


<210> 85
<211> 319
<212> PRT
<213> Mus musculus

<400> 85
Met Ala Thr Ser Asn Ser Ser Thr Ile Val Ser Ser Thr Phe Tyr Leu
  1               5                  10                  15
```

```
Thr Gly Ile Pro Gly Tyr Glu Glu Phe His His Trp Ile Ser Ile Pro
            20                  25                  30

Phe Cys Phe Leu Tyr Leu Val Gly Ile Thr Gly Asn Cys Met Ile Leu
        35                  40                  45

His Ile Val Arg Thr Asp Pro Arg Leu His Glu Pro Met Tyr Tyr Phe
    50                  55                  60

Leu Ala Met Leu Ser Leu Thr Asp Met Ala Met Ser Leu Pro Thr Met
65                  70                  75                  80

Met Ser Leu Phe Arg Val Leu Trp Ser Ile Ser Arg Glu Ile Gln Phe
                85                  90                  95

Asn Ile Cys Val Val Gln Met Phe Leu Ile His Thr Phe Ser Phe Thr
            100                 105                 110

Glu Ser Ser Val Leu Leu Ala Met Ala Leu Asp Arg Tyr Val Ala Ile
        115                 120                 125

Cys His Pro Leu Arg Tyr Ala Thr Ile Leu Thr Pro Lys Leu Ile Ala
    130                 135                 140

Lys Ile Gly Thr Ala Ala Leu Leu Arg Ser Ser Ile Leu Ile Ile Pro
145                 150                 155                 160

Leu Ile Ala Arg Leu Ala Phe Phe Pro Phe Cys Gly Ser His Val Leu
                165                 170                 175

Ser His Ser Tyr Cys Leu His Gln Asp Met Ile Arg Leu Ala Cys Ala
            180                 185                 190

Asp Ile Arg Phe Asn Val Ile Tyr Gly Leu Val Leu Ile Thr Leu Leu
        195                 200                 205

Trp Gly Met Asp Ser Leu Gly Ile Phe Val Ser Tyr Val Leu Ile Leu
    210                 215                 220

His Ser Val Leu Lys Ile Ala Ser Arg Glu Gly Arg Leu Lys Ala Leu
225                 230                 235                 240

Asn Thr Cys Ala Ser His Ile Cys Ala Val Leu Ile Leu Tyr Val Pro
                245                 250                 255

Met Ile Gly Leu Ser Ile Val His Arg Phe Ala Lys His Ser Ser Pro
            260                 265                 270

Leu Ile His Ile Phe Met Ala His Ile Tyr Leu Leu Val Pro Pro Val
        275                 280                 285

Leu Asn Pro Ile Ile Tyr Ser Val Lys Thr Lys Gln Ile Arg Glu Gly
    290                 295                 300

Ile Leu His Leu Leu Cys Ser Pro Lys Ile Ser Ser Ile Thr Met
305                 310                 315
```

<210> 86
<211> 315
<212> PRT
<213> Mus musculus

<400> 86
Met Pro Ser Met Trp Leu Asn Ile Ser Ser Ser Pro Phe Leu Leu Thr
1 5 10 15

Gly Phe Pro Gly Leu Glu Lys Ala His His Leu Ile Ser Leu Pro Leu
20 25 30

Leu Met Ala Tyr Ile Ser Ile Leu Leu Gly Asn Gly Thr Leu Leu Phe
35 40 45

Leu Ile Lys Asp Asp His Asn Leu His Glu Pro Met Tyr Tyr Phe Leu
50 55 60

Gly Met Leu Ala Ala Thr Asp Leu Gly Val Thr Leu Thr Thr Met Pro
65 70 75 80

Thr Val Leu Ser Val Leu Trp Leu Asn His Arg Glu Ile Gly His Gly
85 90 95

Ala Cys Phe Ser Gln Ala Tyr Phe Ile His Thr Leu Ser Ile Val Glu
100 105 110

Ser Gly Val Leu Leu Ala Met Ala Tyr Asp Arg Phe Ile Ala Ile Arg
115 120 125

Asn Pro Leu Arg Tyr Thr Thr Ile Leu Thr Asp Thr Lys Val Ile Lys
130 135 140

Ile Gly Ile Gly Leu Val Met Arg Ala Gly Leu Ser Ile Met Pro Ile
145 150 155 160

Ile Ile Arg Leu His Trp Phe Pro Tyr Cys Arg Ser His Val Leu Ser
165 170 175

His Ala Phe Cys Leu His Gln Asp Val Ile Lys Leu Ala Cys Ala Asp
180 185 190

Ile Thr Phe Asn Arg Leu Tyr Pro Val Val Val Val Phe Ala Met Val
195 200 205

Leu Leu Asp Phe Leu Ile Ile Phe Phe Ser Tyr Val Leu Ile Leu Lys
210 215 220

Thr Val Met Gly Ile Ala Ser Thr Asp Glu Arg Ala Lys Ala Leu Asn
225 230 235 240

Thr Cys Val Ser His Ile Cys Cys Ile Leu Val Phe Tyr Val Thr Val
245 250 255

Val Gly Leu Thr Phe Ile His Arg Phe Gly Lys Asn Val Pro His Val

```
            260                 265                 270

Val His Ile Thr Met Ser Tyr Ile Tyr Phe Leu Phe Pro Pro Phe Met
        275                 280                 285

Asn Pro Val Ile Tyr Ser Ile Lys Thr Lys Gln Ile Gln Ser Gly Leu
    290                 295                 300

Leu Arg Leu Phe Ser Leu Pro Cys Ser Lys Thr
305                 310                 315


<210> 87
<211> 311
<212> PRT
<213> Mus musculus

<400> 87
Met Trp Pro Asn Ser Ser Asp Ala Pro Phe Leu Leu Thr Gly Phe Leu
  1               5                  10                  15

Gly Leu Glu Met Ile His His Trp Ile Ser Ile Pro Phe Phe Val Ile
             20                  25                  30

Tyr Phe Ser Ile Ile Val Gly Asn Gly Thr Leu Leu Phe Ile Ile Trp
         35                  40                  45

Ser Asp His Ser Leu His Glu Pro Met Tyr Tyr Phe Leu Ala Val Leu
     50                  55                  60

Ala Ser Met Asp Leu Gly Met Thr Leu Thr Thr Met Pro Thr Val Leu
 65                  70                  75                  80

Gly Val Leu Val Leu Asn Gln Arg Glu Ile Val His Gly Ala Cys Phe
                 85                  90                  95

Ile Gln Ser Tyr Phe Ile His Ser Leu Ala Ile Val Glu Ser Gly Val
            100                 105                 110

Leu Leu Ala Met Ser Tyr Asp Arg Phe Val Ala Ile Cys Thr Pro Leu
        115                 120                 125

His Tyr Asn Ser Ile Leu Thr Asn Ser Arg Val Met Lys Met Ala Leu
    130                 135                 140

Gly Ala Leu Leu Arg Gly Phe Val Ser Ile Val Pro Pro Ile Met Pro
145                 150                 155                 160

Leu Phe Trp Phe Pro Tyr Cys His Ser His Val Leu Ser His Ala Phe
                165                 170                 175

Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ala Asp Ile Thr Phe
            180                 185                 190

Asn Leu Ile Tyr Pro Val Val Leu Val Ala Leu Thr Phe Phe Leu Asp
        195                 200                 205
```

```
Ala Leu Ile Ile Ile Phe Ser Tyr Val Leu Ile Leu Lys Lys Val Met
    210                 215                 220

Gly Ile Ala Ser Gly Glu Glu Arg Lys Lys Ser Leu Asn Thr Cys Val
225                 230                 235                 240

Ser His Ile Ser Cys Val Leu Val Phe Tyr Ile Thr Val Ile Gly Leu
                245                 250                 255

Thr Phe Ile His Arg Phe Gly Lys Asn Ala Pro His Val Val His Ile
            260                 265                 270

Thr Met Ser Tyr Val Tyr Phe Leu Phe Pro Pro Phe Met Asn Pro Ile
        275                 280                 285

Ile Tyr Ser Ile Lys Thr Lys Gln Ile Gln Arg Ser Ile Leu Arg Leu
    290                 295                 300

Leu Ser Lys His Ser Arg Thr
305                 310


<210> 88
<211> 307
<212> PRT
<213> Mus musculus

<400> 88
Met Trp Ser Asn Ile Ser Ala Ala Pro Phe Leu Leu Thr Gly Phe Pro
  1               5                  10                  15

Gly Leu Glu Ala Ala His His Trp Ile Ser Ile Pro Phe Phe Ala Ile
             20                  25                  30

Tyr Ile Ser Val Leu Leu Gly Asn Gly Thr Leu Leu Tyr Leu Ile Lys
         35                  40                  45

Asp Asp His Asn Leu His Glu Pro Met Tyr Tyr Phe Leu Ala Met Leu
     50                  55                  60

Ala Gly Thr Asp Leu Thr Val Thr Leu Thr Thr Met Pro Thr Val Met
 65                  70                  75                  80

Ala Val Leu Trp Val Asn His Arg Glu Ile Arg His Gly Ala Cys Phe
                85                  90                  95

Leu Gln Ala Tyr Ile Ile His Ser Leu Ser Ile Val Glu Ser Gly Val
            100                 105                 110

Leu Leu Ala Met Ser Tyr Asp Arg Phe Val Ala Ile Cys Thr Pro Leu
        115                 120                 125

His Tyr Asn Ser Ile Leu Thr Asn Ser Arg Val Ile Ala Ile Gly Leu
    130                 135                 140

Gly Val Val Leu Arg Gly Phe Leu Ser Leu Val Pro Pro Ile Leu Pro
145                 150                 155                 160
```

```
Leu Phe Trp Phe Ser Tyr Cys Arg Ser His Val Leu Ser His Ala Phe
                165                 170                 175

Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ala Asp Ile Thr Phe
            180                 185                 190

Asn Arg Ile Tyr Pro Val Val Leu Val Ala Leu Thr Phe Phe Leu Asp
        195                 200                 205

Ala Leu Ile Ile Val Phe Ser Tyr Val Leu Ile Leu Lys Thr Val Met
    210                 215                 220

Gly Ile Ala Ser Gly Glu Glu Arg Ala Lys Ala Leu Asn Thr Cys Val
225                 230                 235                 240

Ser His Ile Ser Cys Val Leu Val Phe Tyr Ile Thr Val Ile Gly Leu
                245                 250                 255

Thr Phe Ile His Arg Phe Gly Lys Asn Ala Pro His Val Val His Ile
            260                 265                 270

Thr Met Ser Tyr Val Tyr Phe Leu Phe Pro Pro Phe Met Asn Pro Ile
        275                 280                 285

Ile Tyr Ser Ile Lys Thr Lys Gln Ile Gln Arg Ser Val Leu His Leu
    290                 295                 300

Leu Ser Val
305
```

<210> 89
<211> 922
<212> DNA
<213> Homo sapiens

<400> 89
cagtgaattt gttctcgtga gcttctcagc cctgtccact gagcttcagg ctctactgtt 60
tctccttttc ttgaccattt acttggttac tttaatgggc aatgtcctca tcatcctggt 120
cactatagct gactctgcac tacaaagtcc tatgtacttc ttcctcagaa acttgtcctt 180
cctggagata ggtttcaact tggtcattgt gtccaagatg ctggggaccc tgatcattca 240
agacacaacc atctccttcc ttggatgtgc cactcagatg tatttcttct tctttttgg 300
ggctgctgag tgctgcctcc tggccaccat ggcatatgac cgctacgtgg ccatctgtga 360
ccccttgtac tacccagtca tcatgggcca catatcctgt gcccagctgg cagctgcctc 420
ttggttctca gggttttcag tggccactgt gcaaaccaca tggattttca gtttcccttt 480
ttgtggcccc aacagggtga accacttctt ctgtgacagc cctcctgtta ttgcactggt 540
ctgtgctgac acctctgtgt ttgaactgga ggctctgaca gccactgtcc tattcattct 600
ctttcctttc ttgctgatcc tgggatccta tgtccgcatc ctctccacta tcttcaggat 660
gccgtcagct gaggggaaac atcaggcatt ctccacctgt tccgcccacc tcttggttgt 720
ctctctcttc tatagcactg ccatcctcac gtatttccga ccccaatcca gtgcctcttc 780
tgagagcaag aagctgctgt cactctcttc cacagtggtg actcccatgt tgaaccccat 840
catctacagc tcaaggaata aagaagtgaa ggctgcactg aagcggctta tccacaggaa 900
cctgggctct cagaaactat ga   922

<210> 90

<211> 306
<212> PRT
<213> Homo sapiens

<400> 90
Ser Glu Phe Val Leu Val Ser Phe Ser Ala Leu Ser Thr Glu Leu Gln
1 5 10 15

Ala Leu Leu Phe Leu Leu Phe Leu Thr Ile Tyr Leu Val Thr Leu Met
20 25 30

Gly Asn Val Leu Ile Ile Leu Val Thr Ile Ala Asp Ser Ala Leu Gln
35 40 45

Ser Pro Met Tyr Phe Phe Leu Arg Asn Leu Ser Phe Leu Glu Ile Gly
50 55 60

Phe Asn Leu Val Ile Val Ser Lys Met Leu Gly Thr Leu Ile Ile Gln
65 70 75 80

Asp Thr Thr Ile Ser Phe Leu Gly Cys Ala Thr Gln Met Tyr Phe Phe
85 90 95

Phe Phe Phe Gly Ala Ala Glu Cys Cys Leu Leu Ala Thr Met Ala Tyr
100 105 110

Asp Arg Tyr Val Ala Ile Cys Asp Pro Leu Tyr Tyr Pro Val Ile Met
115 120 125

Gly His Ile Ser Cys Ala Gln Leu Ala Ala Ala Ser Trp Phe Ser Gly
130 135 140

Phe Ser Val Ala Thr Val Gln Thr Thr Trp Ile Phe Ser Phe Pro Phe
145 150 155 160

Cys Gly Pro Asn Arg Val Asn His Phe Phe Cys Asp Ser Pro Pro Val
165 170 175

Ile Ala Leu Val Cys Ala Asp Thr Ser Val Phe Glu Leu Glu Ala Leu
180 185 190

Thr Ala Thr Val Leu Phe Ile Leu Phe Pro Phe Leu Leu Ile Leu Gly
195 200 205

Ser Tyr Val Arg Ile Leu Ser Thr Ile Phe Arg Met Pro Ser Ala Glu
210 215 220

Gly Lys His Gln Ala Phe Ser Thr Cys Ser Ala His Leu Leu Val Val
225 230 235 240

Ser Leu Phe Tyr Ser Thr Ala Ile Leu Thr Tyr Phe Arg Pro Gln Ser
245 250 255

Ser Ala Ser Ser Glu Ser Lys Lys Leu Leu Ser Leu Ser Ser Thr Val
260 265 270

Val Thr Pro Met Leu Asn Pro Ile Ile Tyr Ser Ser Arg Asn Lys Glu

```
        275                 280                 285

Val Lys Ala Ala Leu Lys Arg Leu Ile His Arg Asn Leu Gly Ser Gln
    290                 295                 300

Lys Leu
305
```

<210> 91
<211> 315
<212> PRT
<213> Homo sapiens

<400> 91

```
Met Met Trp Glu Asn Trp Thr Ile Val Ser Glu Phe Val Leu Val Ser
  1               5                  10                  15

Phe Ser Ala Leu Ser Thr Glu Leu Gln Ala Leu Leu Phe Leu Leu Phe
             20                  25                  30

Leu Thr Ile Tyr Leu Val Thr Leu Met Gly Asn Val Leu Ile Ile Leu
         35                  40                  45

Val Thr Ile Ala Asp Ser Ala Leu Gln Ser Pro Met Tyr Phe Phe Leu
     50                  55                  60

Arg Asn Leu Ser Phe Leu Glu Ile Gly Phe Asn Leu Val Ile Val Pro
 65                  70                  75                  80

Lys Met Leu Gly Thr Leu Ile Ile Gln Asp Thr Thr Ile Ser Phe Leu
                 85                  90                  95

Gly Cys Ala Thr Gln Met Tyr Phe Phe Phe Phe Phe Gly Ala Ala Glu
            100                 105                 110

Cys Cys Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Asp Pro Leu His Tyr Pro Val Ile Met Gly His Ile Ser Cys Ala Gln
    130                 135                 140

Leu Ala Ala Ala Ser Trp Phe Ser Gly Phe Ser Val Ala Thr Val Gln
145                 150                 155                 160

Thr Thr Trp Ile Phe Ser Phe Pro Phe Cys Gly Pro Asn Arg Val Asn
                165                 170                 175

His Phe Phe Cys Asp Ser Pro Pro Val Ile Ala Leu Val Cys Ala Asp
            180                 185                 190

Thr Ser Val Phe Glu Leu Glu Ala Leu Thr Ala Thr Val Pro Phe Ile
        195                 200                 205

Leu Phe Pro Phe Leu Leu Ile Leu Gly Ser Tyr Val Arg Ile Leu Ser
    210                 215                 220
```

```
Thr Ile Phe Arg Met Pro Ser Ala Glu Gly Lys His Gln Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ala His Leu Leu Val Val Ser Leu Phe Tyr Ser Thr Ala
                245                 250                 255

Ile Leu Thr Tyr Phe Arg Pro Gln Ser Ser Ala Ser Ser Glu Ser Lys
            260                 265                 270

Lys Leu Leu Ser Leu Ser Ser Thr Val Val Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Ser Arg Asn Lys Glu Val Lys Ala Ala Leu Lys Arg
    290                 295                 300

Leu Ile His Arg Thr Leu Gly Ser Gln Lys Leu
305                 310                 315


<210> 92
<211> 315
<212> PRT
<213> Mus musculus

<400> 92
Met Thr Trp Gly Asn Trp Thr Thr Val Arg Glu Phe Ile Leu Met Ser
  1               5                  10                  15

Phe Ser Ser Leu Ser Tyr Glu Val Gln Ala Leu Leu Phe Leu Leu Phe
             20                  25                  30

Leu Ile Ile Tyr Leu Val Thr Leu Met Gly Asn Val Leu Ile Ile Leu
         35                  40                  45

Val Thr Thr Ala Asp Ser Ala Leu Gln Ser Pro Met Tyr Phe Phe Leu
     50                  55                  60

Arg Asn Leu Ser Phe Leu Glu Ile Gly Phe Asn Leu Val Ile Val Pro
 65                  70                  75                  80

Lys Met Leu Ser Thr Leu Ile Leu Gln Asp Lys Thr Ile Ser Phe Leu
                 85                  90                  95

Gly Cys Ala Thr Gln Met Tyr Phe Phe Phe Phe Phe Gly Ala Ala Glu
            100                 105                 110

Cys Cys Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Met Ala Ile Cys
        115                 120                 125

Asp Pro Leu His Tyr Pro Ile Ile Met Ser Arg Arg Ser Cys Ala Gln
    130                 135                 140

Leu Ala Ala Ala Ser Trp Phe Ser Gly Phe Pro Val Ala Thr Val Gln
145                 150                 155                 160

Thr Thr Trp Ile Phe Ser Phe Pro Phe Cys Gly Pro Asn Met Val Asn
                165                 170                 175
```

```
His Phe Phe Cys Asp Ser Pro Pro Val Ile Ala Leu Val Cys Ala Asp
            180                 185                 190

Thr Ser Leu Phe Glu Leu Glu Ala Leu Thr Ala Thr Val Leu Phe Ile
        195                 200                 205

Leu Phe Pro Phe Leu Leu Ile Leu Gly Ser Tyr Val Arg Ile Leu Ser
    210                 215                 220

Thr Ile Phe Arg Met Pro Ser Ala Glu Gly Lys Arg Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Tyr Ser Thr Ala
                245                 250                 255

Ile Leu Thr Tyr Phe Arg Pro Arg Ser Asn Thr Ser Pro Glu Asn Lys
            260                 265                 270

Lys Met Leu Ser Leu Ser Tyr Thr Val Ile Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Arg Asn Asn Glu Val Lys Ala Ala Leu Arg Arg
    290                 295                 300

Ile Ile His Arg Thr Leu Gly Pro Gln Lys Leu
305                 310                 315
```

<210> 93
<211> 317
<212> PRT
<213> Homo sapiens

<400> 93

```
Met Ala Ile Gly Asn Trp Thr Glu Ile Ser Glu Phe Ile Leu Met Ser
  1               5                  10                  15

Phe Ser Ser Leu Pro Thr Glu Ile Gln Ser Leu Leu Phe Leu Thr Phe
             20                  25                  30

Leu Thr Ile Tyr Leu Val Thr Leu Lys Gly Asn Ser Leu Ile Ile Leu
         35                  40                  45

Val Thr Leu Ala Asp Pro Met Leu His Ser Pro Met Tyr Phe Phe Leu
     50                  55                  60

Arg Asn Leu Ser Phe Leu Glu Ile Gly Phe Asn Leu Val Ile Val Pro
 65                  70                  75                  80

Lys Met Leu Gly Thr Leu Leu Ala Gln Asp Thr Thr Ile Ser Phe Leu
                 85                  90                  95

Gly Cys Ala Thr Gln Met Tyr Phe Phe Phe Phe Phe Gly Val Ala Glu
            100                 105                 110

Cys Phe Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys
```

```
        115                 120                 125

Ser Pro Leu His Tyr Pro Val Ile Met Asn Gln Arg Thr Arg Ala Lys
    130                 135                 140

Leu Ala Ala Ala Ser Trp Phe Pro Gly Phe Pro Val Ala Thr Val Gln
145                 150                 155                 160

Thr Thr Trp Leu Phe Ser Phe Pro Phe Cys Gly Thr Asn Lys Val Asn
                165                 170                 175

His Phe Phe Cys Asp Ser Pro Pro Val Leu Lys Leu Val Cys Ala Asp
            180                 185                 190

Thr Ala Leu Phe Glu Ile Tyr Ala Ile Val Gly Thr Ile Leu Val Val
        195                 200                 205

Met Ile Pro Cys Leu Leu Ile Leu Cys Ser Tyr Thr Arg Ile Ala Ala
    210                 215                 220

Ala Ile Leu Lys Ile Pro Ser Ala Lys Gly Lys His Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Tyr Ile Ser Ser
                245                 250                 255

Ser Leu Thr Tyr Phe Trp Pro Lys Ser Asn Asn Ser Pro Glu Ser Lys
            260                 265                 270

Lys Leu Leu Ser Leu Ser Tyr Thr Val Val Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Arg Asn Ser Glu Val Lys Asn Ala Leu Ser Arg
    290                 295                 300

Thr Phe His Lys Val Leu Ala Leu Arg Asn Cys Ile Pro
305                 310                 315


<210> 94
<211> 317
<212> PRT
<213> Mus musculus

<400> 94
Met Ala Thr Gly Asn Gln Thr Arg Ile Thr Glu Phe Ile Leu Met Ser
  1               5                  10                  15

Phe Ser Ser Leu Pro Thr Glu Ile Gln Thr Leu Leu Phe Leu Ala Phe
             20                  25                  30

Leu Thr Ile Tyr Leu Val Thr Leu Leu Gly Asn Ser Leu Ile Ile Leu
         35                  40                  45

Val Thr Leu Ala Asp Pro Met Leu Gln Ser Pro Met Tyr Phe Phe Leu
     50                  55                  60
```

```
Arg Asn Leu Ser Phe Leu Glu Ile Gly Phe Asn Leu Val Ile Val Pro
 65                  70                  75                  80

Lys Met Leu Gly Thr Leu Ile Ala Gln Asp Thr Ser Ile Ser Phe Leu
                 85                  90                  95

Gly Cys Ala Thr Gln Met Tyr Phe Phe Phe Phe Phe Gly Val Ala Glu
            100                 105                 110

Cys Phe Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Ser Pro Leu His Tyr Pro Val Ile Met Asn Gln Glu Thr Arg Val Lys
    130                 135                 140

Leu Ala Ala Ala Ser Trp Phe Pro Gly Phe Pro Val Ala Thr Val Gln
145                 150                 155                 160

Thr Thr Trp Leu Phe Ser Phe Pro Phe Cys Ala Thr Asn Lys Val Asn
                165                 170                 175

His Phe Phe Cys Asp Ser Pro Pro Val Leu Arg Leu Val Cys Ala Asp
            180                 185                 190

Thr Ala Gln Phe Glu Val Tyr Ala Ile Val Gly Thr Ile Leu Val Val
        195                 200                 205

Met Ile Pro Cys Leu Leu Ile Leu Cys Ser Tyr Thr Leu Ile Ala Ala
    210                 215                 220

Ser Ile Leu Lys Ile Pro Ser Ala Lys Gly Lys His Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Tyr Val Ser Ser
                245                 250                 255

Ser Leu Thr Tyr Phe Arg Pro Lys Ser Asn Asn Ser Pro Glu Ser Lys
            260                 265                 270

Lys Leu Leu Ser Leu Ser Tyr Thr Val Val Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Arg Asn Asn Glu Val Lys Ser Ala Leu Ser Arg
    290                 295                 300

Thr Phe His Lys Ala Leu Ala Leu Arg Asn His Ile Thr
305                 310                 315


<210> 95
<211> 317
<212> PRT
<213> Homo sapiens

<400> 95
Ile Ala Thr Gly Asn Trp Thr Arg Ile Ser Glu Phe Ile Leu Met Ser
  1               5                  10                  15
```

```
Phe Ser Ser Leu Pro Thr Glu Ile Gln Ser Leu Leu Phe Leu Thr Phe
            20                  25                  30

Leu Thr Ile Tyr Leu Val Thr Leu Met Gly Asn Cys Leu Ile Ile Leu
        35                  40                  45

Val Thr Leu Ala Asp Pro Met Leu His Ser Pro Met Tyr Phe Phe Leu
    50                  55                  60

Arg Asn Leu Ser Phe Leu Glu Ile Gly Phe Asn Leu Val Ile Val Pro
65                  70                  75                  80

Lys Met Leu Gly Thr Leu Leu Ala Gln Asp Thr Thr Ile Ser Phe Leu
                85                  90                  95

Gly Cys Ala Thr Gln Met Tyr Phe Phe Phe Phe Phe Gly Val Ala Glu
            100                 105                 110

Cys Phe Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys
        115                 120                 125

Ser Pro Leu His Tyr Pro Val Ile Met Asn Gln Arg Thr Arg Ala Lys
    130                 135                 140

Leu Ala Ala Thr Ser Trp Phe Pro Gly Phe Pro Val Ala Thr Val Gln
145                 150                 155                 160

Thr Thr Trp Leu Phe Ser Phe Pro Phe Cys Gly Thr Asn Lys Val Asn
                165                 170                 175

His Phe Phe Cys Asp Ser Pro Pro Val Leu Arg Leu Val Cys Ala Asp
            180                 185                 190

Thr Ala Leu Phe Glu Ile Tyr Ala Ile Val Gly Thr Ile Leu Val Val
        195                 200                 205

Met Ile Pro Cys Leu Leu Ile Leu Cys Ser Tyr Thr His Ile Ala Ala
    210                 215                 220

Ala Ile Leu Lys Ile Pro Ser Ala Lys Gly Lys Asn Lys Ala Phe Ser
225                 230                 235                 240

Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Tyr Ile Ser Leu
                245                 250                 255

Ser Leu Thr Tyr Phe Arg Pro Lys Ser Asn Asn Ser Pro Glu Gly Lys
            260                 265                 270

Lys Leu Leu Ser Leu Ser Tyr Thr Val Met Thr Pro Met Leu Asn Pro
        275                 280                 285

Ile Ile Tyr Ser Leu Arg Asn Asn Glu Val Lys Asn Ala Leu Ser Arg
    290                 295                 300

Thr Val Ser Lys Ala Leu Ala Leu Arg Asn Cys Ile Pro
305                 310                 315
```

<210> 96
<211> 1019
<212> DNA
<213> Homo sapiens

<400> 96
gtgctggctt cagggaacag ctcttctcat cctgtgtcct tcatcctgct tggaatccca 60
ggcctggaga gtttccagtt gtggattgcc tttccgttct gtgccacgta tgctgtggct 120
gttgttggaa atatcactct cctccatgta atcagaattg accacaccct gcatgagccc 180
atgtacctct ttctggccat gctggccatc actgacctgg tcctctcctc ctccactcaa 240
cctaagatgt tggccatatt ctggtttcat gctcatgaga ttcagtacca tgcctgcctc 300
atccaggtgt tcttcatcca tgccttttct tctgtggagt ctggggtgct catggctatg 360
gccctggact gctacgtggc tatctgcttc ccactccgac actctagcat cctgacccca 420
tcggtcgtga tcaaactggg gaccatcgtg atgctgagag ggctgctgtg ggtgagcccc 480
ttctgcttca tggtgtctag gatgcccttc tgccaacacc aagccattcc ccagtcatac 540
tgtgagcaca tggctgtgct gaagttggtg tgtgctgata caagcataag tcgtgggaat 600
gggctctttg tggccttctc tgtggctggc tttgatatga ttgtcattgg tatgtcatac 660
gtgatgattt tgagagctgt gcttcagttg ccctcaggtg aagcccgcct caaagctttt 720
agcacacgtt cctcccatat ctgtgtcatc ttggctcttt atatcccagc ccttttttct 780
ttcctcacct accgctttgg ccatgatgtg ccccgagttg tacacatcct gtttgctaat 840
ctctatctac tgatacctcc catgctcaac cccatcattt atggagttag aaccaaacag 900
atcggggaca gggttatcca aggatgttgt ggaaacatcc cctgagcaaa gggtcagtgt 960
atccccatca cttacattgc cccactaatg tggggacatt aatgaacatt tgacaggct 1019

<210> 97
<211> 314
<212> PRT
<213> Homo sapiens

<400> 97
Val Leu Ala Ser Gly Asn Ser Ser Ser His Pro Val Ser Phe Ile Leu
1 5 10 15

Leu Gly Ile Pro Gly Leu Glu Ser Phe Gln Leu Trp Ile Ala Phe Pro
20 25 30

Phe Cys Ala Thr Tyr Ala Val Ala Val Val Gly Asn Ile Thr Leu Leu
35 40 45

His Val Ile Arg Ile Asp His Thr Leu His Glu Pro Met Tyr Leu Phe
50 55 60

Leu Ala Met Leu Ala Ile Thr Asp Leu Val Leu Ser Ser Ser Thr Gln
65 70 75 80

Pro Lys Met Leu Ala Ile Phe Trp Phe His Ala His Glu Ile Gln Tyr
85 90 95

His Ala Cys Leu Ile Gln Val Phe Phe Ile His Ala Phe Ser Ser Val
100 105 110

Glu Ser Gly Val Leu Met Ala Met Ala Leu Asp Cys Tyr Val Ala Ile
115 120 125

```
Cys Phe Pro Leu Arg His Ser Ser Ile Leu Thr Pro Ser Val Val Ile
    130                 135                 140

Lys Leu Gly Thr Ile Val Met Leu Arg Gly Leu Leu Trp Val Ser Pro
145                 150                 155                 160

Phe Cys Phe Met Val Ser Arg Met Pro Phe Cys Gln His Gln Ala Ile
                165                 170                 175

Pro Gln Ser Tyr Cys Glu His Met Ala Val Leu Lys Leu Val Cys Ala
            180                 185                 190

Asp Thr Ser Ile Ser Arg Gly Asn Gly Leu Phe Val Ala Phe Ser Val
        195                 200                 205

Ala Gly Phe Asp Met Ile Val Ile Gly Met Ser Tyr Val Met Ile Leu
    210                 215                 220

Arg Ala Val Leu Gln Leu Pro Ser Gly Glu Ala Arg Leu Lys Ala Phe
225                 230                 235                 240

Ser Thr Arg Ser Ser His Ile Cys Val Ile Leu Ala Leu Tyr Ile Pro
                245                 250                 255

Ala Leu Phe Ser Phe Leu Thr Tyr Arg Phe Gly His Asp Val Pro Arg
            260                 265                 270

Val Val His Ile Leu Phe Ala Asn Leu Tyr Leu Leu Ile Pro Pro Met
        275                 280                 285

Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Gly Asp Arg
    290                 295                 300

Val Ile Gln Gly Cys Cys Gly Asn Ile Pro
305                 310
```

<210> 98
<211> 339
<212> PRT
<213> Mus musculus

<400> 98

```
Met Pro Glu Lys Met Leu Ser Lys Leu Ile Ala Tyr Leu Leu Leu Ile
  1               5                  10                  15

Glu Ser Cys Arg Gln Thr Ala Gln Leu Val Lys Gly Arg Arg Ile Trp
             20                  25                  30

Val Asp Ser Arg Pro His Trp Pro Asn Thr Thr His Tyr Arg Glu Leu
         35                  40                  45

Glu Asp Gln His Val Trp Ile Ala Ile Pro Phe Cys Ser Met Tyr Ile
     50                  55                  60

Leu Ala Leu Val Gly Asn Gly Thr Ile Leu Tyr Ile Ile Ile Thr Asp
 65                  70                  75                  80
```

```
Arg Ala Leu His Glu Pro Met Tyr Leu Phe Leu Cys Leu Leu Ser Ile
                 85                  90                  95

Thr Asp Leu Val Leu Cys Ser Thr Thr Leu Pro Lys Met Leu Ala Ile
            100                 105                 110

Phe Trp Leu Arg Ser His Val Ile Ser Tyr His Gly Cys Leu Thr Gln
        115                 120                 125

Met Phe Phe Val His Ala Val Phe Ala Thr Glu Ser Ala Val Leu Leu
    130                 135                 140

Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Arg Pro Leu His Tyr
145                 150                 155                 160

Thr Ser Ile Leu Asn Ala Val Val Ile Gly Lys Ile Gly Leu Ala Cys
                165                 170                 175

Val Thr Arg Gly Leu Leu Phe Val Phe Pro Phe Val Ile Leu Ile Glu
            180                 185                 190

Arg Leu Pro Phe Cys Gly His His Ile Ile Pro His Thr Tyr Cys Glu
        195                 200                 205

His Met Gly Ile Ala Lys Leu Ala Cys Ala Ser Ile Lys Pro Asn Thr
    210                 215                 220

Ile Tyr Gly Leu Thr Val Ala Leu Ser Val Thr Gly Met Asp Val Val
225                 230                 235                 240

Leu Ile Ala Thr Ser Tyr Ile Leu Ile Leu Gln Ala Val Leu Arg Leu
                245                 250                 255

Pro Ser Lys Asp Ala Gln Phe Arg Ala Phe Ser Thr Cys Gly Ala His
            260                 265                 270

Ile Cys Val Ile Leu Val Phe Tyr Ile Pro Ala Phe Phe Ser Phe Phe
        275                 280                 285

Thr His Arg Phe Gly His His Val Pro Pro Gln Val His Ile Ile Leu
    290                 295                 300

Ala Asn Leu Tyr Leu Leu Val Pro Pro Val Leu Asn Pro Leu Val Tyr
305                 310                 315                 320

Gly Ile Asn Thr Lys Gln Ile Arg Leu Arg Ile Leu Asp Phe Phe Val
                325                 330                 335

Lys Arg Arg
```

<210> 99
<211> 326
<212> PRT
<213> Mus musculus

<400> 99

```
Met Lys Val Ala Ser Ser Phe His Asn Asp Thr Asn Pro Gln Asp Val
  1               5                  10                  15

Trp Tyr Val Leu Ile Gly Ile Pro Gly Leu Glu Asp Leu His Ser Trp
             20                  25                  30

Ile Ala Ile Pro Ile Cys Ser Met Tyr Ile Val Ala Val Ile Gly Asn
         35                  40                  45

Val Leu Leu Ile Phe Leu Ile Val Thr Glu Arg Ser Leu His Glu Pro
     50                  55                  60

Met Tyr Phe Phe Leu Ser Met Leu Ala Leu Ala Asp Leu Leu Leu Ser
 65                  70                  75                  80

Thr Ala Thr Ala Pro Lys Met Leu Ala Ile Phe Trp Phe His Ser Arg
                 85                  90                  95

Gly Ile Ser Phe Gly Ser Cys Val Ser Gln Met Phe Phe Ile His Phe
            100                 105                 110

Ile Phe Val Ala Glu Ser Ala Ile Leu Leu Ala Met Ala Phe Asp Arg
        115                 120                 125

Tyr Val Ala Ile Cys Tyr Pro Leu Arg Tyr Thr Thr Ile Leu Thr Ser
    130                 135                 140

Ser Val Ile Gly Lys Ile Gly Thr Ala Ala Val Val Arg Ser Phe Leu
145                 150                 155                 160

Ile Cys Phe Pro Phe Ile Phe Leu Val Tyr Arg Leu Leu Tyr Cys Gly
                165                 170                 175

Lys His Ile Ile Pro His Ser Tyr Cys Glu His Met Gly Ile Ala Arg
            180                 185                 190

Leu Ala Cys Asp Asn Ile Thr Val Asn Ile Ile Tyr Gly Leu Thr Met
        195                 200                 205

Ala Leu Leu Ser Thr Gly Leu Asp Ile Leu Leu Ile Ile Ile Ser Tyr
    210                 215                 220

Thr Met Ile Leu Arg Thr Val Phe Gln Ile Pro Ser Trp Ala Ala Arg
225                 230                 235                 240

Tyr Lys Ala Leu Asn Thr Cys Gly Ser His Ile Cys Val Ile Leu Leu
                245                 250                 255

Phe Tyr Thr Pro Ala Phe Phe Ser Phe Phe Ala His Arg Phe Gly Gly
            260                 265                 270

Lys Thr Val Pro Arg His Ile His Ile Leu Val Ala Asn Leu Tyr Val
        275                 280                 285

Val Val Pro Pro Met Leu Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys
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    290                 295                 300

Gln Ile Gln Asp Arg Val Val Phe Leu Phe Ser Ser Val Ser Thr Cys
305                 310                 315                 320

Gln His Asp Ser Arg Cys
                325
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<210> 100
<211> 316
<212> PRT
<213> Mus musculus

<400> 100

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Met Pro His Leu Asn Ser Thr Ile Phe Arg Pro Ser Val Leu Thr Leu
  1               5                  10                  15

Thr Gly Ile Pro Gly Leu Glu Ser Val Gln Phe Trp Ile Gly Ile Pro
             20                  25                  30

Phe Cys Ile Met Tyr Ile Ile Ala Leu Leu Gly Asn Ser Leu Leu Leu
         35                  40                  45

Val Val Ile Lys Val Glu Arg Ser Leu His Glu Pro Met Tyr Leu Phe
     50                  55                  60

Leu Ala Met Leu Gly Ala Thr Asp Ile Ser Leu Ser Thr Ser Ile Leu
 65                  70                  75                  80

Pro Lys Met Leu Gly Ile Phe Trp Phe His Leu Ser Thr Ile Tyr Phe
                 85                  90                  95

Asp Ala Cys Leu Leu Gln Met Trp Leu Ile His Thr Phe Gln Gly Ile
            100                 105                 110

Glu Ser Gly Ile Leu Phe Ala Met Ala Met Asp Arg Tyr Val Ala Ile
        115                 120                 125

Cys Asp Pro Leu Arg His Ala Ser Ile Phe Thr Gln Arg Leu Leu Thr
    130                 135                 140

Gln Ile Gly Val Gly Val Thr Leu Arg Ala Ala Leu Phe Val Ala Pro
145                 150                 155                 160

Cys Leu Phe Leu Ile Lys Cys Arg Leu Lys Phe Tyr Trp Thr Thr Val
                165                 170                 175

Val Ser His Ser Tyr Cys Glu His Met Ala Ile Val Lys Leu Ala Ala
            180                 185                 190

Glu Asp Val His Val Asn Lys Ile Tyr Gly Leu Phe Val Ala Phe Ser
        195                 200                 205

Ile Leu Gly Leu Asp Ile Ile Phe Ile Thr Leu Ser Tyr Ile Arg Ile
    210                 215                 220
```

```
Phe Ile Thr Val Phe Lys Leu Pro Gln Lys Glu Ala Arg Leu Lys Ala
225                 230                 235                 240

Phe Asn Thr Cys Val Ala His Ile Cys Val Phe Leu Glu Phe Tyr Leu
                245                 250                 255

Leu Ala Phe Phe Ser Phe Phe Thr His Arg Phe Gly Tyr His Val Pro
            260                 265                 270

Ser Tyr Ile His Ile Leu Leu Ser Asn Leu Tyr Leu Leu Val Pro Pro
        275                 280                 285

Leu Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Asp
    290                 295                 300

Gln Val Ser Lys Ile Leu Tyr Cys Asn Tyr Ser Tyr
305                 310                 315


<210> 101
<211> 318
<212> PRT
<213> Homo sapiens

<400> 101
Met Ser Asp Ser Asn Leu Ser Asp Asn His Leu Pro Asp Thr Phe Phe
  1               5                  10                  15

Leu Thr Gly Ile Pro Gly Leu Glu Ala Ala His Phe Trp Ile Ala Ile
             20                  25                  30

Pro Phe Cys Ala Met Tyr Leu Val Ala Leu Val Gly Asn Ala Ala Leu
         35                  40                  45

Ile Leu Val Ile Ala Met Asp Asn Ala Leu His Ala Pro Met Tyr Leu
     50                  55                  60

Phe Leu Cys Leu Leu Ser Leu Thr Asp Leu Ala Leu Ser Ser Thr Thr
 65                  70                  75                  80

Val Pro Lys Met Leu Ala Ile Leu Trp Leu His Ala Gly Glu Ile Ser
                 85                  90                  95

Phe Gly Gly Cys Leu Ala Gln Met Phe Cys Val His Ser Ile Tyr Ala
            100                 105                 110

Leu Glu Ser Ser Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala
        115                 120                 125

Ile Cys Asn Pro Leu Arg Tyr Thr Thr Ile Leu Asn His Ala Val Ile
    130                 135                 140

Gly Arg Ile Gly Phe Val Gly Leu Phe Arg Ser Val Ala Ile Val Ser
145                 150                 155                 160

Pro Phe Ile Phe Leu Leu Arg Arg Leu Pro Tyr Cys Gly His Arg Val
                165                 170                 175
```

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Met Thr His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys
            180                 185                 190

Ala Asn Ile Thr Val Asn Ile Val Tyr Gly Leu Thr Val Ala Leu Leu
        195                 200                 205

Ala Met Gly Leu Asp Ser Ile Leu Ile Ala Ile Ser Tyr Gly Phe Ile
    210                 215                 220

Leu His Ala Val Phe His Leu Pro Ser His Asp Ala Gln His Lys Ala
225                 230                 235                 240

Leu Ser Thr Cys Gly Ser His Ile Gly Ile Ile Leu Val Phe Tyr Ile
                245                 250                 255

Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His His Glu Val
            260                 265                 270

Pro Lys His Val His Ile Phe Leu Ala Asn Leu Tyr Val Leu Val Pro
        275                 280                 285

Pro Val Leu Asn Pro Ile Leu Tyr Gly Ala Arg Thr Lys Glu Ile Arg
    290                 295                 300

Ser Arg Leu Leu Lys Leu Leu His Leu Gly Lys Thr Ser Ile
305                 310                 315
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<210> 102
<211> 312
<212> PRT
<213> Homo sapiens

<400> 102

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Met Ser Ile Ser Asn Ile Thr Val Tyr Met Pro Ser Val Leu Thr Leu
  1               5                  10                  15

Val Gly Ile Pro Gly Leu Glu Ser Val Gln Cys Trp Ile Gly Ile Pro
             20                  25                  30

Phe Cys Ala Ile Tyr Leu Ile Ala Met Ile Gly Asn Ser Leu Leu Leu
         35                  40                  45

Ser Ile Ile Lys Ser Glu Arg Ser Leu His Glu Pro Leu Tyr Ile Phe
     50                  55                  60

Leu Gly Met Leu Gly Ala Thr Asp Ile Ala Leu Ala Ser Ser Ile Met
 65                  70                  75                  80

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Val Pro Glu Ile Tyr Phe
                 85                  90                  95

Asp Ser Cys Leu Leu Gln Met Trp Phe Ile His Thr Leu Gln Gly Ile
            100                 105                 110

Glu Ser Gly Ile Leu Val Ala Met Ala Leu Asp Arg Tyr Val Ala Ile
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```
        115                 120                 125

Cys Tyr Pro Leu Arg His Ala Asn Ile Phe Thr His Gln Leu Val Ile
    130                 135                 140

Gln Ile Gly Thr Met Val Val Leu Arg Ala Ala Ile Leu Val Ala Pro
145                 150                 155                 160

Cys Leu Val Leu Ile Lys Cys Arg Phe Gln Phe Tyr His Thr Thr Val
                165                 170                 175

Ile Ser His Ser Tyr Cys Glu His Met Ala Ile Val Lys Leu Ala Ala
            180                 185                 190

Ala Asn Val Gln Val Asn Lys Ile Tyr Gly Leu Phe Val Ala Phe Thr
        195                 200                 205

Val Ala Gly Phe Asp Leu Thr Phe Ile Thr Leu Ser Tyr Ile Gln Ile
    210                 215                 220

Phe Ile Thr Val Phe Arg Leu Pro Gln Lys Glu Ala Arg Phe Lys Ala
225                 230                 235                 240

Phe Asn Thr Cys Ile Ala His Ile Cys Val Phe Leu Gln Phe Tyr Leu
                245                 250                 255

Leu Ala Phe Phe Ser Phe Phe Thr His Arg Phe Gly Ser His Ile Pro
            260                 265                 270

Pro Tyr Ile His Ile Leu Phe Ser Ser Ile Tyr Leu Leu Val Pro Pro
        275                 280                 285

Phe Leu Asn Pro Leu Val Tyr Gly Ala Lys Thr Thr Gln Ile Arg Ile
    290                 295                 300

His Val Val Lys Met Phe Cys Ser
305                 310
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<210> 103
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 103
ccccatactg tggatcatgg caaat 25

<210> 104
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 104
ggctcatcat tgtgccttgc aaag 24

<210> 105
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 105
ctcatcattg tgccttgcaa aggc 24

<210> 106
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 106
gactaaatga tggacaacca ctctagt 27

<210> 107
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 107
agctaatctt tcaggagttg acagc 25

<210> 108
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 108

caatgatgga aatagccaat gtgag 25

<210> 109
<211> 24
<212> DNA
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<220>
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oligonucleotide primer

<400> 109
gagtctctaa atttgcgcca gctt 24

<210> 110
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<212> DNA
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<220>
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oligonucleotide primer

<400> 110
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<210> 111
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 111
ctcacctgga ggcccgactc 20

<210> 112
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 112
tgctcttccc tctgtgctca gc 22

<210> 113
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 113
gatggcctca gctactaacc tgagac 26

<210> 114
<211> 25
<212> DNA
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 114
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<210> 115
<211> 27
<212> DNA
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oligonucleotide primer

<400> 115
cctctacata tcctttcttg ggaatac 27

<210> 116
<211> 24
<212> DNA
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oligonucleotide primer

<400> 116
ccatggaggc tgccaatgag tctt 24

<210> 117
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 117
agttgccagt gtgggtgatg cagt 24

<210> 118
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oligonucleotide primer

<400> 118
atgggtgaac cagtcctaca cagatg 26

<210> 119
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<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 119
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<210> 120
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 120
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<210> 121
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 121
tctacactcg gggcaaccac aatt 24

<210> 122
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oligonucleotide primer

<400> 122
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<210> 123
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<220>
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oligonucleotide primer

<400> 123
tctccgttct tgcttttctc tttcttc 27

<210> 124
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<212> DNA
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<220>
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oligonucleotide primer

<400> 124
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<210> 125
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<400> 125
ctgtgggctt tatgtccaaa acttcct 27

<210> 126
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<220>
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oligonucleotide primer

<400> 126
gtctcacctc acactggtct tc 22

<210> 127
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<212> DNA
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<220>
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<400> 127
catctttctg tatgtcaggc ctggca 26

<210> 128
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<220>
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oligonucleotide primer

<400> 128
ctgacttgca cagagtgagc tt 22

<210> 129
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<400> 129
catagctgac acccacctac at 22

<210> 130
<211> 26
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oligonucleotide primer

<400> 130
cacccatgta cttcttcctg ggcaat 26

<210> 131
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<212> DNA
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<220>
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oligonucleotide primer

<400> 131
actgcagtca tggttaccaa ga 22

<210> 132
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 132
catagctgac acccacctac at 22

<210> 133
<211> 26
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<220>
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oligonucleotide primer

<400> 133
cacccatgta cttcttcctg ggcaat 26

<210> 134
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<212> DNA
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 134
ctgcagtcat ggttaccaag at 22

<210> 135

<211> 20
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<220>
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oligonucleotide primer

<400> 135
aaggcctttc agcctctaca 20

<210> 136
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<220>
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oligonucleotide primer

<400> 136
tctgcccctg tagcactgtt ttaactg 27

<210> 137
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oligonucleotide primer

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ccccttttctc aatcccttta t 21

<210> 138
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oligonucleotide primer

<400> 138
atgggaaaca ccatcatcat ag 22

<210> 139
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<220>

<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 139
tggtcatagc tgacacccac ctacat 26

<210> 140
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 140
aattgcccag gaagaagtac at 22

<210> 141
<211> 22
<212> DNA
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<220>
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oligonucleotide primer

<400> 141
tgattgtctg tgtggataaa cg 22

<210> 142
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<213> Artificial Sequence

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oligonucleotide primer

<400> 142
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<210> 143
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<212> DNA
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oligonucleotide primer

<400> 143
ttatggttgt gaccaggatc tc 22

<210> 144
<211> 22
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oligonucleotide primer

<400> 144
cattgtgatt gtctgtgtgg at 22

<210> 145
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oligonucleotide primer

<400> 145
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<210> 146
<211> 22
<212> DNA
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oligonucleotide primer

<400> 146
ttatggttgt gaccaggatc tc 22

<210> 147
<211> 22
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<213> Artificial Sequence

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oligonucleotide primer

<400> 147
ggctgtggtg tctctgtttt ac 22

<210> 148
<211> 26
<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 148
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<210> 149
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 149
ctatgaactt gccctgctca t 21

<210> 150
<211> 22
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 150
agggcaagtt catagctctg tt 22

<210> 151
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 151
ctacaccgta gtcactcctg cgctga 26

<210> 152
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 152
cgtgttcctc agggtgtaaa ta 22

<210> 153
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 153
agtcacttca cctgcaagat cct 23

<210> 154
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 154
ccgcatgcca gcttcagcac tg 22

<210> 155
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 155
cttcgctgac cgacgtgtt 19

<210> 156
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 156
acaaccccat gtacttcctt ct 22

<210> 157
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 157
agcaacctct ccctcatgga catctg 26

<210> 158
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 158
gggtttccag gaaattgtct ag 22

<210> 159
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 159
ttttatggga caatctcctt ca 22

<210> 160
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 160
tgtacttcaa acccaaggcc aaggat 26

<210> 161
<211> 22
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 161
gaacaatgcg acagtcttat cc 22

<210> 162
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 162
cacaactgtg gtcatctctt ca 22

<210> 163
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 163
ccctcatgtc cacatcctcc ttacca 26

<210> 164
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 164
ggtgggaaga gcagatagaa at 22

<210> 165
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 165

taacacatcc aactgccttc tt 22

<210> 166
<211> 23
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 166
aggcctggaa cacctgcaca tct 23

<210> 167
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 167
ctaagcagaa agggatggag at 22

<210> 168
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 168
tcttcaggca gttctactgc tt 22

<210> 169
<211> 23
<212> DNA
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 169
ctctcaggag gcccgctaca agg 23

<210> 170
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 170
tggcacctat atgagagaca ca 22

<210> 171
<211> 22
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 171
catcatctac agcctctgga at 22

<210> 172
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 172
cactccgagc ccttctcatt ggg 23

<210> 173
<211> 22
<212> DNA
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<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 173
cctcaggagt cactagctga ga 22

<210> 174
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:

oligonucleotide primer

<400> 174
catcatctac agcctctgga at 22

<210> 175
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 175
cactccgagc ccttctcatt ggg 23

<210> 176
<211> 22
<212> DNA
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oligonucleotide primer

<400> 176
cctcaggagt cactagctga ga 22

<210> 177
<211> 22
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oligonucleotide primer

<400> 177
gaggagaatg ctgctgatgt ac 22

<210> 178
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oligonucleotide primer

<400> 178
tggtctcata cacagtgatg tcgcca 26

<210> 179
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 179
ccagctgttg tgaagttggt at 22

<210> 180
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<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 180
ggcagaagaa tcagacctct ct 22

<210> 181
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<213> Artificial Sequence

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oligonucleotide primer

<400> 181
acttcatcct tgaggggctc ttcgat 26

<210> 182
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<212> DNA
<213> Artificial Sequence

<220>
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oligonucleotide primer

<400> 182
gagaaaagga aaaggtgggt aa 22

<210> 183
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<213> Artificial Sequence

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oligonucleotide primer

<400> 183
ctcatctggg agcaagagaa 20

<210> 184
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 184
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oligonucleotide primer

<400> 186
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<400> 198
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<210> 199
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<400> 204
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<400> 206
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<210> 207
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oligonucleotide primer

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